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FINANCIAL TIMES

PUBLISHED IN LONDON AND FRANKFURT

No. 27,880 Monday June 4 1979 ***15p

CONTINENTAL SELLING PRICES: AUSTRIA Sch 15; BELGIUM Fr 25; DENMARK Kr 3.5; FRANCE Fr 3.5; GERMANY DM 2.0; ITALY L 600; NETHERLANDS Fl 2.0; NORWAY Kr 3.5; PORTUGAL Esc 25; SPAIN Pta 50; SWEDEN Kr 3.25; SWITZERLAND Fr 2.0; EIRE 20p

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NEWS SUMMARY

GENERAL

Pope asserts 'force of spirit'

A clear message of encouragement to Roman Catholics throughout Eastern Europe, Pope John Paul declared the "spiritual unity of Christian Europe" in spite of political divisions.

He emphasised the significance of his election as the first Slav Pope and said it was Christ's will that a Polish Pope should "at this precise moment, manifest the spiritual unity of Christian Europe."

Earlier he told thousands of cheering students in Warsaw that strength was not to be measuerd by physical force but by the force of the spirit. Pages 2 and Back

Plot to kill Muzorewa'

Bishop Abel Muzorewa, Zimbabwe Rhodesia's new Prime Minister, accused some politicians of "treasonable behaviour" as it was disclosed that the police had uncovered a plot to assassinate him.

The Minister of Law and Order claimed that the detention last week of officials of the Rev. Sithole's Zanu was connected with the murder plot. Page 2

Italians vote

Armed police and soldiers guarded 76,000 polling stations as Italians began voting in two-day general elections which are expected to inflict a setback on the Communists for the first time in 30 years. Page 2

Turks on trial

More than 800 Turks, including shopkeepers, teachers and housewives, face a military tribunal in Adana today on charges connected with bloody sectarian riots in the Kahramanmaras, in which more than 100 people died.

Pakistan riot

Armed and stick-wielding police confronted hundreds of brick-throwing college students in Lahore, Pakistan, where it is feared continuing violence may cause the postponement of the planned November elections.

Plague victim

A teen-age youth is in a Los Angeles hospital with bubonic plague, the second case to be reported in Southern California in three weeks, according to the City Health Department.

Welensky ill

Sir Roy Welensky, the 71-year-old former Rhodesian Prime Minister, was described as "very ill" in Scarborough General Hospital, north Yorkshire, where he is recovering from a heart attack.

Briefly . . .

Two DC-10 jets flown by American Airlines experienced mechanical problems on flights on Saturday night, the company said. A close look at the DC-10 story, Page 15

Ashes of Greek opera singer Maria Callas were strewn over the Aegean Sea, fulfilling a wish in her will.

Twenty-one youths were arrested after a series of running fights on the seafront at Great Yarmouth.

Jacksons of Piccadilly, the Queen's grocers, is to close after 130 years.

Financial Times

This issue of the Financial Times has not been printed in Frankfurt because of the public Whitsun holiday in Germany today. Copies for FT readers in Europe and the U.S. have been distributed from London.

BUSINESS

Industry demand now on upturn

● **INDUSTRIAL** demand is now picking up on a broad front, according to two surveys released today, but many companies remain uncertain how long the recovery will last.

The CBI's monthly trends survey shows manufacturers order books stronger in May than all of last year, a finding supported by the Financial Times Business Opinion survey, which charts a further rise in new orders. But the FT survey found that businessmen were less optimistic about further increases over the coming year. Back and Page 22

● **NEDC** meeting on Wednesday, the first since the present Government took office, will discuss a paper which points out that while the decline in the UK's share of world exports has steadied since 1974, the volume and value of imported manufactured goods has grown. Back Page

● **BRUSSELS**, headquarters of the EEC, is facing a bankruptcy crisis, with the Belgian administration unable to pay its employees at the end of last week. The Belgian Prime Minister has intervened to arrange £1.9m bridging finance to pay the city's 2,400 public employees. Page 2

● **LLOYD'S** of London Committee has launched an emergency inquiry into the affairs of a subsidiary of insurance broker, Christopher Moran Group, following an approach to the committee by auditors of a medium-sized nonmarine underwriting syndicate. Page 4

● **INDIAN CABINET** has approved a proposal for a 3m-tonne steel plant in the southern India province of Andhra Pradesh with Russian assistance. The project, costing £1.4bn will be in production within four years.

● **U.S. FEDERAL** grand jury decision to criminally indict seven transatlantic shipping groups was attacked by the president of the General Council of British Shipping as "the product of a total lack of coherent shipping policy in the U.S." Back Page: Editorial comment, Page 14

● **LAKER AIRWAYS** will start a major battle this week to get all restrictions on its low-fare Skytrain services to New York and Los Angeles removed. Page 4

LABOUR

● **NEI PARSONS** clerical workers have reached agreement on the introduction of micro-electronic technology, which includes a guarantee of no redundancies. It is regarded by both company and union officials as a breakthrough on the issue. Back Page

● **NALGO**, Britain's largest white-collar union, is likely to make its strike policy tougher, following last winter's prolonged industrial action by social workers. Page 6

● **CHEMICAL** process workers are believed to have rejected a pay offer which could lead to a reduction in the working week in companies introducing new technology. Page 6

● **BSC's** £100m deep water ore terminal at Hunterston on the Clyde, which is to be officially opened tomorrow, will have empty ore stock yards. An inter-union dispute has prevented ore deliveries to the terminal. Page 5

COMPANIES

● **SEARS HOLDINGS** activities have started 1979 satisfactorily, in spite of poor weather and economic conditions, the chairman says. Page 18

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Saudis will oppose moves to limit oil supplies for West

BY JAMES BUCHAN IN JEDDAH

Saudi Arabia will oppose any attempts to limit supplies of crude oil to the West, and has guaranteed to maintain its present production ceiling, says Sheikh Ahmad Zaki Yamani, the Saudi Oil Minister.

But in an interview published in Riyadh he made no mention of reported Saudi intentions to increase production by 500,000 barrels a day, from the present 8.5m barrels.

In the interview, which constituted a statement of principles for the conference later this month of the Organisation of Petroleum Exporting Countries, the Minister said the Saudis would aim to "prevent any further exacerbation of the energy crisis."

His remarks fall well short of Western hopes that Saudi Arabia would substantially increase production to provide some slack in the tight world oil market.

A shortfall in supply has permitted producers to start a chaotic round of leapfrogging surcharges which have raised the price of some crudes to $6 above Saudi Arabian light, the OPEC marker, which is now $14.55 a barrel.

Prices on the spot market—short term crude sales—have reached very high levels.

In the interview Sheikh Yamani made no reference to a statement attributed last week to Dr. Abdul Hadi Taher, Governor of Petromin, the State petroleum organisation, that Saudi Arabia was considering raising production by 500,000 barrels a day, but the article suggested that present production levels could come up for revision at the time of the June 26 OPEC meeting.

Dr. Taher said that the production increase might come into force on July 1.

Saudi Arabia has a production ceiling of 8.5m barrels a day. This is an annual average and has been in force on and off since 1973. She raised it to 9.5m barrels a day to make up for losses from Iranian export production, and then stabilised at present levels at the end of March.

Sheikh Yamani has expressed Saudi willingness to raise prices to curb the present pricing spiral. Last month he presented a proposal to the Saudi Cabinet for reunifying the price structure, which would inevitably include some accommodation with the surcharges.

Saudi Arabia would seek to ensure "that a limited number of oil companies do not realise excessive profits at the expense of both producers and consumers," a charge made by Crown Prince Fahd at the end of last month.

The chances of other Middle East countries following Saudi Arabia is somewhat limited, even though it produces more than twice as much oil as her nearest competitor.

Above all, Sheikh Yamani's statement is a sign of good will toward the West.

Editorial comment and the shadow over the Gulf, Page 14
"Green petrol"—a possible palliative, Page 16

IRAN OIL CHIEFS QUIT

THE ENTIRE board of the National Iranian Oil Company has tendered its resignation in support of Mr. Hassan Nazih, the chairman who is deeply embroiled in a political row with clergymen supporting Ayatollah Khomeini.

The board's resignation letter was passed on to the Cabinet on matter, but is not expected to be accepted. The letter simply said: "The present conditions are such that no real service can be rendered by us."

The present seven-man board of NIOC was only formed a month ago in a reshuffle which dispensed with most of the oil executives carried over from the *old regime*.

Decline of Iran industry, Back and Page 3

Information scandal may force Vorster to resign

BY QUENTIN PEEL IN JOHANNESBURG

MR. JOHN VORSTER, the South African President and former Prime Minister, is expected to be forced to resign in the wake of a damning report to be published this week on his complicity in the Information Department scandal and its attempted cover-up.

The dormant scandal involving alleged maladministration and outright corruption will undoubtedly blow up again after the final conclusions of the Commission, headed by Judge Rudolf Erasmus, on the secret activities of the Information Department are discussed at an emergency Cabinet meeting today. Publication of the report is likely to be brought forward because of leaks of its contents.

It is understood that the commission has reversed its original conclusion that Mr. Vorster was not to blame for the massive misappropriation of State funds by the department under Dr. Connie Mulder, former Information Minister, and Dr. Eschel Rhoodie, the former *Secretary for Information*.

It accuses the former Prime Minister of lying to the commission and being party to an attempted cover-up of the scandal, and specifically withdraws the "exoneration" granted in its first report last December.

The commission's other major conclusion, it is understood, is that several key operators of the massive secret funds granted for Information Department counter-propaganda and dirty tricks—some R64m (£39m)—were guilty not only of irregularities, but outright corruption. There is, however, no suggestion that Mr. Vorster was himself aware of the corruption.

In its investigations, which began *last November* shortly after Mr. Vorster's resignation as Prime Minister, the Erasmus commission has unravelled a complex series of "front companies" operated with Information Department secret funds, and has studied transactions in private bank accounts, including those of Dr. Rhoodie.

The sort of secret operations already uncovered were the part-financing of an attempted takeover in the U.S. of the Washington Star newspaper at a cost of $10m; the financing of an attempted takeover of the British publisher Morgan Grampian, which was equally abortive; *and the funding of a* supposedly independent English-language newspaper in South Africa, the Citizen, costing some R32m (£19m).

All told, more than 130 secret operations were identified, most of which have been kept secret.

It is believed that Mr. P. W. Botha, Mr. Vorster's successor *as Prime Minister, has accepted* that his predecessor must be sacrificed in order to defuse the information scandal once and for all.

Nationalist sources hope that further Press exposure of corruption in the Government will be controlled by the legislation going through Parliament to create an advocate general, who will be able to bar further revelations. The only question is just how and when Mr. Vorster will go.

The Government faces a key test of its position on Wednesday with the by-election in Dr. Mulder's former constituency, the mining town of Randfontein. In spite of an expected abstention from Dr. Mulder's supporters, and a swing to the Right *from white miners disgruntled* at the proposed liberalisation of the labour laws, there is not thought to be any serious threat to the ruling National Party.

Although the information affair has, therefore, not had any immediate dramatic effect on the overwhelming support for the National Party from the *white electorate, it has opened* up serious divisions within the Party itself, and the demise of Mr. Vorster can only aggravate them.

Dr. Mulder, once the second most powerful man in the Party, is also not showing his hand on any future moves since he was expelled from the Party *for his part in the scandal.*

UNCTAD fails to find common ground on most major issues

BY PHILIP BOWRING

AFTER SEVERAL days of increasingly feverish negotiations ending in an all-night session yesterday, the fifth United Nations Conference on Trade and Development failed to reach agreement on most of the major issues it tackled.

Following four weeks of gruelling talks the rich and poor nations at the UNCTAD meeting failed to agree a resolution on the item at the top of the agenda — the restructuring of the world economy.

There was also no agreement *on a number of other important* —though less ambitious—items covering money, debt, trade preferences for developing countries, the multilateral trade negotiations and shipping.

However, the meeting did call for an end to the spread of protectionism and concluded agreements on commodities and on more help for the least developed countries. The world's 30 poorest countries will get immediate aid and member countries agreed to double their aid "as soon as possible."

The 3,000-plus delegates at the meeting began to leave Manila with the general feeling that the meeting had not been a success. Even hardline developed countries, who persistently warned developing countries against expecting too much from such gatherings, admitted that progress had at best been modest. Some developing countries' delegates, especially from Africa, were pessimistic and irritated by what they saw as successful stonewalling by the rich.

The resolution on protectionism, which has been the most talked about issue of the conference, is seen as unexceptional but worthwhile. It condemns the phenomenon and agrees that structural adjustment is needed in developed countries to ensure an "effective international division of labour."

It stops well short of original Group of 77 demands for new mechanisms to regulate protectionism and to direct adjustment processes within the industrialised world. The Group of 77 is made up of 119 developing countries who coordinate their joint strategy.

The resolution on least developed countries provides for short and long term "action programmes." Whatever happens to official aid flows, the resolution effectively commits developed countries to increase the percentage of their aid going to the poorest.

A resolution was also adopted reaffirming the need to progress towards the aid target of 0.7 per cent of GNP. However, several countries expressed reservations, including Britain, which said it could not make any commitments on increased aid levels pending the outcome of its review on public spending.

The Integrated Programme for Commodities received a shot in the arm from a resolution to establish a framework for a programme on processing, marketing and distribution of commodities.

The conference also agreed a resolution on economic co-operation between developing countries which had been affected by the developed countries' insistence on the principle of the universality of UN institutions. A compromise form of words was reached.

Sir Geoffrey: political balance

Howe may free 1m from tax

BY DAVID FREUD

SIR GEOFFREY HOWE, the Chancellor, is likely to carry out the previous Government's plan of raising income tax thresholds in next week's Budget enough to take 1m people out of the tax net altogether.

Such a move would put personal allowances up by about a third more in the April caretaker Budget, costing an additional £600m in lost revenue.

The higher thresholds are seen as providing political balance in a package whose *main thrust* is expected to favour the better-off.

Furthermore, they would allow the Conservatives to claim that they had matched the election pledge to the worse-off by Mr. Denis Healey, the previous Chancellor, while still putting through their own programme.

The raised allowances will have to be accommodated without raising the public-sector borrowing requirement beyond the target level of about £8.5bn in this financial year.

Reports last week that the borrowing requirement would be at least £12bn on unchanged policies are discounted by Whitehall officials in favour of the £10.5bn figure disclosed by Mr. Healey a fortnight ago.

In the caretaker Budget Mr. Healey put up allowances in line with the rise in the retail price index, as he was *obliged to do under the* Rooker-Wise amendment to the 1977 Finance Act.

The increase, 8.9 per cent, goes into force, backdated, in August unless modified by Sir Geoffrey.

Action threat by leaders of engineers

BY PHILIP BASSETT, LABOUR STAFF

ENGINEERING UNION leaders gave a warning yesterday of industrial action if improvements due this week in a pay offer to more than 2m workers are unsatisfactory.

Mr. Terry Duffy, president of the Amalgamated Union of Engineering Workers, the largest union in the central negotiating body for the industry, said that if a new pay offer to be put forward on Tursday was still unsatisfactory, the "initial onslaught" of industrial action might take the form of an overtime ban and possibly selective strikes.

Mr. Duffy left the last round of negotiations with the Engineering Employers' Federation with a warning that the two sides were "collision bound."

His militant stance was echoed yesterday by Mr. Gavin Laird, a union executive member, who, although less pessimistic than some leading officials on the outcome of the negotiations, said that if negotiations broke down this week, there was a "distinct probability" that action, including an overtime ban, one-day stoppages and further selective strikes, would take place.

If the offer is unsatisfactory, the warning is likely to be given force next week by a recalled meeting of the union's policy-making national committee.

The Confederation of Shipbuilding and Engineering Unions, the umbrella body for 15 unions in the industry, has been more cautious than the AUEW in warning of the implications of a breakdown in negotiations.

The AUEW, though, is by far the largest member union, and if the question of action was so undecided as to come to a vote, a decision would almost certainly follow AUEW policy.

Widespread national industrial action is difficult for union leaders to mount in the engineering industry because the complex two-tier negotiating structure allows local negotiations to determine actual earnings and makes the national agreement largely academic to many union members.

After consultation with member companies, the employers' federation has indicated that it is prepared to make a "modest improvement" on Thursday. However, senior federation *officials have made clear that* the improvement will be small.

The unions rejected the federation's offer tabled early last month to increase the craftsman's national minimum rate by £5 to £65 a week.

The unions are seeking new national basic rates for craftsmen of £80 with proportionate rises for other grades. Local negotiations mean that most engineering workers receive more than the national minimum rates, but they are used in the calculation of overtime and premium payments.

○ An improved offer to 96,000 power workers is likely to be *made in negotiations this week*, and if union officials judge the improvements sufficient they may put it to ballot. Power

Continued on Back Page

$77m transatlantic lorry building link abandoned

BY DAVID LASCELLES IN NEW YORK

A PROPOSED $77m transatlantic link between two heavy vehicle makers, MAN of West Germany and White Motors of the U.S. was cancelled yesterday after the two companies agreed that the benefits might be less than originally thought.

Mr. S. E. Knudsen, chairman and chief executive of White, said the decision had been taken "after top executives of both companies met and conducted a *wide-ranging re-appraisal* of the proposals."

He went on: "From this it became apparent that the synergistic benefits would be significantly less than we had originally anticipated."

MAN and White had been negotiating the link-up since the middle of last year, seeking a deal in which they would exchange technology, then design, assemble and sell lorries in North America, using MAN and U.S.-produced components.

Originally, MAN was to have made a $15.6m investment for a 12.6 per cent share in White. But in February, MAN agreed to buy a majority share in *White for $77m.*

MAN's motives in seeking the deal were to secure a foothold in the U.S. heavy-vehicle market. White, on the other hand, is weak in capital and has been seeking outside participation.

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Army guards Italy polling booths

BY RUPERT CORNWELL IN ROME

VOTING BEGAN yesterday in Italy's eighth post-war general election. The first results should be known a few hours after the 76,000 polling stations close at 2 pm local time today.

Police and troops were guarding the stations to prevent any terrorist disruption of voting. But by mid afternoon no serious incidents had been reported, while turn out was around 2 per cent down from the previous general election in June 1976 at a similar stage.

The country's 42.2m electors over 18 years of age, including many migrant workers resident abroad and some 2.5m first-time voters wil be choosing 630 members for the Chamber of Deputies and 315 senators, following the dissolution of Parliament at the start of April more than two years ahead of schedule.

A few violent acts however did mar the eve of polling. In Trieste a Communist party worker was attacked, and two of the party's branch offices burnt. Other incidents were reported in Rome and in the southern university town of Cosenza.

A campaign which has failed to capture the imagination is not expected to produce any very dramatic shift in voting patterns. However, opinion polls predict that the long-ruling Christian Democrats may well add a point or two to their 1976 score of 38.7 per cent.

On the other hand it is generally forecast that the Communists could suffer a loss of 2 per cent or more from their record 34.0 per cent at the last election. It would be the party's first such reverse for 30 years.

A sign of the public's disillusion has been the attention attracted by the unpredictable Radical Party, which many observers believe may even triple its 1976 total of 1 per cent of the popular vote.

Palestinians warn Sadat supporters

By Ihsan Hijazi in Beirut

PALESTINIAN guerrillas, who claimed responsibility for the assassination of an Arab notable in the Israeli-occupied city of Gaza, have threatened to take similar action against any Arab who co-operates in negotiations on the proposed autonomy in the Gaza Strip and the West Bank of the Jordan.

The murder of Sheikh Hashim Khuzandar, the "Imam of Gaza" last Friday night, has been claimed by the hardline Popular Front for the Liberation of Palestine (PFLP)

Sheikh Kuzandar was known to have supported President Sadat's peace initiative and the Egyptian-Israeli treaty. His murder followed speculation that the Egyptians and Israelis had been trying to get Sheikh Khuzandar and Mr. Rashad Shawa, the mayor of Gaza, to join the autonomy negotiations which are to be resumed in Alexandria on June 7

L. Daniel adds from Tel Aviv: Teams in Jerusalem and Cairo are getting ready for the start of negotiations between Egypt and Israel on the normalisation of relations between the two countries and the shape and content of the proposed autonomy for the West Bank and Gaza. Three Israeli Cabinet Ministers, including Mr. Moshe Dayan, the Foreign Minister, will visit Egypt within the next ten days.

Meanwhile, Premier Menachem Begin is facing a challenge from within his own "Herut" faction of the Likud Government. A three-day conference of 1,000 Herst delegates was due to meet late last night. The party's firebrand, Mrs. Geulah Cohen, has already announced she will not attend, and a new party is about to be formed led by one of Israel's most esteemed scientists, Prof. Yuval Ne'eman, who considers that Herut, and Likud as a whole, is abandoning Herut's principles by its concesions.

New UAE government delayed

BY RICHARD JOHNS

THE DEADLINE for the formation of a new Government of the United Arab Emirates passed here in Dubai yesterday without agreement on its make-up.

Sheikh Zayed, president of the UAE and ruler of Abu Dhabi, has still not approved the list of names originally submitted nearly a fortnight ago by Sheikh Rashid, the ruler of Dubai, who undertook to become Prime Minister and form a new administration as long ago as April 30.

The meeting of the Supreme Council, including the other five Emirs of the Federation, which was scheduled for yesterday to approve the new Cabinet, did not take place.

It is understood that Sheikh Zayed has reservations about one of the names proposed by Sheikh Rashid, and also the positions designated to two others by him.

At the same time, they have agreed that two Sharjas in the outgoin gCabinet, Mr. Abdullah Omran Taryam and Mr. Khalfan Al-Roumi, who held the education and health portfolios respectively, will be dropped.

Despite the failure to meet the deadline, there is no atmosphere of crisis. On the contrary, relations between Sheikh Zayed and Sheikh Rashid seem to be exceptionally cordial at present.

When he accepted his mandate, Sheikh Rashid was given carte blanche by the president to form an administration of his own choosing, so that the paralysing crisis over the form of the federation could be overcome. This was in accordance with suggestions made by Sheikh Sabah Al-Ahmed Al-Sabah, the Kuwaiti Foreign Minister, who attempted in April to mediate between the two leading figures in the union.

Sheikh Rashid has committed himself to making over half his oil revenues, which this year should amount to some $1.75bn, available to the common budget. But his assumption is that most, if not all, of his money will be devoted to federal services in Dubai, for which he has in the past been responsible.

These services include the Dubai defence force (nominally part of the NAE armed forces), the police, electricity, water, his own municipal administration, and TV and radio.

Egypt bid to save arms industry

BY ROGER MATTHEWS IN CAIRO

EGYPT IS EXPECTED to launch a last-ditch effort this week to rescue something from the threatened collapse of the billion-dollar Arab arms industry. Mr. Hosni Mubarak, the Egyptian Vice-President, is planning to visit both Washington and London soon and is expected to urge President Carter and Mrs. Margaret Thatcher to continue support for the Arab Organisation for Industrialisation (AOI).

In a letter to the British Government last week Crown Prince Fahd of Saudi Arabia spelled out the intention of his country, together with Qatar and the United Arab Emirates, to dissolve the AOI, of which Egypt is the fourth partner. The three Gulf members—which broke relations with Egypt after the signing of the peace treaty with Israel—are scheduled to meet in Paris this week. Egypt is not expected to be present, although Egyptian AOI officials may be there.

The AOI was set up four years ago with the Gulf states providing the funding and Egypt the facilities and a 15,000 labour force for the production via joint-venture companies of Jeeps (with American Motors), Lynx helicopters (with Westland), Swingfire anti-tank missiles (with the Dynamics Group of British Aerospace), and later fixed-wing aircraft with Dassault-Breguet of France.

Mr. Mubarak, a former air force commander, is understood to be additionally concerned as it was planned for the AOI to take on increasing responsibility for keeping the backbone of the Egyptian airforce—nearly 200 Soviet MiG-21s—in operational condition. Already Egypt's MiG-23s have been grounded owing to lack of spares and the same fate is threatening a growing number of the MiG-21s, many of which are due for major overhauls.

Egypt is insisting that it will continue with the AOI even if the other three states withdraw, but the first action to halt building operations appears to have been taken. The AOI is understood to have instructed two British companies, Laing and Cementation, to cease work at least temporarily on the new factory going up for Arab-British helicopters at Helwan, south of Cairo. A clause in the contracts with the two companies is believed to provide for a halt of up to three weeks.

Although funding is probably available to keep the helicopter venture operational for some months, Westland must be most deeply concerned about the viability of the project if the Arab market is lost because of the boycott on Egypt. Arab-British Helicopters had planned to produce some 250 Lynx, of which nearly half would have been exported.

Egypt has frozen AOI funds held in Cairo, although it has now unblocked the accounts of the joint-venture companies.

Brussels facing bankruptcy

By Giles Merritt in Brussels

BRUSSELS IS facing a bankruptcy crisis which, according to observers, is similar to that which besets New York. The Belgian capital's administration was unable to pay its employees at the end of last week and emergency funds had to be arranged to cover hardship cases.

The city, which likes to style itself the capital of Europe, is reported to have spent its anticipated revenues for both 1979 and 1980, and is now unable to meet its current commitments. M. Wilfried Martens, the Belgian Prime Minister, has personally intervened and helped to arrange bridging finance of BFr 110m (£1.9m) for the salaries of the city's 2,400 employees.

M. Gaston Geens, the Finance Minister, has been made responsible for setting up further emergency funding. One of the chief problems he is expected to face will be negotiation of the terms of the state guarantee that the financial institutions will accept. The size of the loan required immediately by the Brussels authorities is unknown, although some estimates put the first tranche alone at BFr 990m.

Fundamental to the city's bankruptcy crisis is the Belgian system for administering municipal finances. The banker to Belgium's communes is the Credit Communal, but it has apparently become seriously overstretched by the demands of Greater Brussels.

Malta Premier accuses Libya

By Godfrey Grima in Valetta

Mr. Dom Mintoff, Malta's Prime Minister, on Saturday night accused Libya of "pulling Malta's leg" in the protracted negotiations over territorial waters.

Malta needs agreement on territorial waters to avoid problems with Libya when it starts drilling for oil in what is reputed to be a promising zone.

Talks have been going on for three years, and at one time Col. Muammar Gaddafy, Libya's leader, agreed to have the dispute settled by the International Court of Justice. Libya's unwillingness since then to come to an agreement with Malta has exasperated Mr. Mintoff, but Saturday night's remarks were the first public acknowledgement of differences with Libya.

Thousands greet Pope on 'pilgrimage' to Poland

BY ANTHONY ROBINSON, EAST EUROPEAN CORRESPONDENT

WAVE AFTER wave of applause swept through a vast audience of students and young people outside Warsaw's Church of Saint Anne yesterday as Pope Paul II told Poland's youth it was not by physical force but by the openness of heart "filled by the Holy Spirit" that man was to be measured.

Then crowds surged through the streets to Victory Square, to wave to the Pope as he flew off in a white helicopter to continue his pilgrimage to the shrines and holy places of his motherland.

The papal visit began on a note of deep emotion as his Holiness bent to kiss the native soil on his arrival at Warsaw Airport. He embraced the Cardinal Primate of Poland Msgr. Stefan Wyszynski and, in reply to the welcoming speech by the Polish Head of State Mr. Henryk Jablonski, underlined his gratitude at being allowed to make the visit (denied to his predecessor Pope Paul VI) and the "purely religious motives" of his pilgrimage. He added: "I desire that the fruit of this visit may be the internal unity of my fellow countrymen and also a further favourable development of the relation between State and Church."

But the way in which religion and the Catholic Church are inseparable from wider issues of politics and Polish history is the crucial motive of his visit so far. Thus he began his reply to the welcoming speech of Communist Party First Secretary Mr. Edward Gierek at Warsaw's Belvedere Palace by recalling the words of Pope Paul—"A Poland that is prosperous and serene is also beneficial for tranquility and good collaboration among peoples of Europe."

References to Poland's history wove a common theme into the speeches of both Church and State leaders. But while Mr. Gierek spoke of "alliance, friendship and co-operation with the Soviet Union" as the safeguard of Socialist Poland's "independence, sovereignty and security," the Pope, during his sermon in Victoria Square, recalled the bitter days of the Warsaw uprising in 1944 when Poles "undertook an unequal battle against the aggressor, a battle in which it was abandoned by the allied powers."

Earlier he told Mr. Gierek, State and Party leaders at the Belvedere Palace that "peace and the drawing together of peoples can be achieved only on the priciple of respect for the objective rights of the nation such as the right to existence, to freedom, to be a social and political subject and also to the formation of its own culture and civilisation."

Minister alleges ZANU plot to kill Muzorewa

BY TONY HAWKINS IN SALISBURY

ZIMBABWE RHODESIA'S majority rule Government of Bishop Muzorewa begins its first week in office today with two tough warnings to political rivals of swift retribution if the law is broken. The new Prime Minister himself in a nation-wide radio and TV broadcast accused some leading politicians whom he did not name of "mischievous, irresponsible, naked arrogance and, I might even go so far as to say, treasonable behaviour."

Even as the Bishop was speaking his Minister of Law and Order, Mr Francis Zindoga, revealed that police had uncovered a plot to assassinate the new Prime Minister. Mr. Zindoga alleged that the detention last week of officials of the Reverend Ndabaningi Sithole's ZANU was connected with the murder plot. He said the ZANU men had planned to kill the Bishop and some of his "henchmen."

The Rev. Sithole denied the charges and a party spokesman accused Mr. Zindoga of "irresponsibility" in making public such accusations when the police were still investigating the matter.

Meanwhile security force officials said that the ZANU men arrested last week were suspected of hoarding arms.

In a second nationwide broadcast last night Mr. Zindoga said the new Government "will not hesitate to act against those who, by unconstitutional means, may seek to destroy what has been achieved by the people through the ballot box."

In his address the Bishop revealed that since the April elections he had sent messages to the leaders of the frontline states advising them that the country now had a popularly elected majority rule government. He said he took as a "negative reply" the fact that these countries and especially Zambia and Mozambique were still allowing their countries to be used as bases to overthrow his Government.

Meanwhile it has been revealed that several U.S. State Department envoys had visited Salisbury for talks with the bishop in the past week.

Soviet aid for India steel plant

By K. K. Sharma in New Delhi

THE INDIAN Cabinet has approved a proposal for a 3m-tonne steel plant to be built at Vishakapatnam, in Andhra Pradesh, south India, with Russian assistance. The plant requires an investment of Rs 22.56bn (£1.4bn) and will start producing steel within four years.

This is the biggest single investment decision by the Janata Government, and because of the magnitude of the project and the scale of resources mobilisation, it will be undertaken in two stages.

The initial capacity in the first stage will be about 1.2m tonnes. It will be the third Soviet-aided steel plant in India (the others are at Bhilai and Bokaro).

The foreign exchange component of the project is estimated at around Rs 5bn. It is hoped to obtain this from existing rouble credits committed by Russia.

India now imports 1m tonnes of steel a year.

The Government has plans for two more steel plants, at Mangalore in Karnataka state, and Paradip, in Orissa state.

Mexico trade deficit rises

BY WILLIAM CHISLETT IN MEXICO CITY

MEXICO'S trade deficit in the first quarter of this year was $500m, 54 per cent higher than the same period in 1978, according to the leading private bank Banamex. The bank estimates that the year end deficit will be $2.6bn compared to $2.2bn last year.

The figures confirm the sharp increase in imports and the failure of non-oil exports to make any substantial headway. Public sector imports increased in the first three months by over 70 per cent compared to the same period last year. Private sector imports rose by 40 per cent.

Such levels are indicative of the expansion plans being made in industry as a result of the greatly improved economic climate since the devaluation of the peso in 1976. But industry is not yet exporting very much more.

Exports increased overall by 49 per cent in the first quarter. Non-oil exports rose, however, by only 24 per cent.

More Afghan refugees flee

By Chris Sherwell in Islamabad

THOUSANDS of refugees from the fighting in Afghanistan have crossed the frontier into Pakistan over the past ten days, swelling the numbers to nearly 100,000.

The influx is an indication of the growing intensity of the running guerrilla war being waged by Afghan Muslim rebels against the Soviet-backed Government of Mr. Taraki in Kabul. The previous figure of 85,000 was given less than a fortnight ago.

Long-term optimism on tankers

By Ian Hargreaves,
Shipping Correspondent

A BOOM in oil tanker freight rates is possible in the years 1982-85, according to Terminal Operators, the London consultancy company.

In its annual review of world oil markets, the consultant emerges with a forecast which is in flat contradiction to many gloomier projections, especially from within the oil companies, in the last two years.

Terminal Operators believes that the current level of ship scrapping and the prospect of reasonably steady trade growth will produce higher seaborne crude oil movements, which it expects to rise by 5.9 per cent between 1977 and 1982.

This, the authors argue, will move tanker supply and demand into general balance in 1982, with an even earlier recovery in demand for smaller crude tankers and for oil product carriers.

The fact that three remain serious short-term uncertainties about the world economy and oil trades will tend, Terminal Operators believes, to make shipowners cautious about ordering new ships.

There is a need, according to the report, for example, for a 50 per cent increase in the product carrier fleet in the review period.

Terminal Operators thinks that owners will be particularly cautious in ordering larger tankers, when the demand for such vessels returns after 1982, "particularly if prospective owners see a risk in the possible exhaustion of world oil reserves before their investments can be fully amortised."

** World Oil Demand and Tanker Markets to 1982, Terminal Operators, Rodwell House, Middlesex St., London E1 7HJ. £65 (UK), £67 (overseas).*

World Economic Indicators

RETAIL PRICES

	April 79	Mar. 79	Feb. 79	April 78	% change over previous year	index base year
UK	214.2	210.6	208.9	194.6	10.1	1974=100
U.S.	211.5	209.1	207.1	191.5	10.4	1967=100
Holland	124.9	124.2	123.0	119.8	4.2	1975=100
Italy	148.5	146.1	144.3	129.9	14.3	1976=100
Japan	125.7	124.0	123.0	122.5	2.6	1975=100
	Mar. 79	Feb. 79	Jan. 79	Mar. 78		
West Germany	149.2	148.2	147.1	144.5	3.3	1970=100
Belgium	131.4	131.3	130.9	126.7	3.7	1976=100
France	213.0	211.1	209.7	193.4	10.1	1970=100

UNEMPLOYMENT

		May '79	April '79	March '79	May '78
UK	000s	1,306.7	1,310.9	1,350.5	1,366.4
	%	5.4	5.5	5.7	5.7
		April '79	March '79	Feb. '79	April '78
W. Germany	000s	875.5	957.7	1,134.0	1,000.4
	%	3.8	4.2	5.0	4.4
Holland	000s	208.2	209.75	211.1	200.5
	%	5.0	5.1	5.2	4.8
France	000s	1,290.6	1,313.0	1,341.9	1,105.7
	%	5.6	5.7	5.8	5.1
U.S.	000s	5,900.0	5,871.0	5,881.0	5,983.0
	%	5.8	5.7	5.7	6.0
Japan	000s	1,240.0	1,350.0	1,210.0	1,230.0
	%	2.2	2.1	1.9	2.2
		March '79	Feb. '79	Jan. '79	March '78
Belgium	000s	301.0	303.1	300.9	284.1
	%	7.5	7.6	7.5	7.1
		Jan. '79	Oct. '78	July '78	Jan. '78
Italy	000s	1,632.0	1,651.0	1,648.0	1,520.0
	%	8.1	7.5	7.5	8.0

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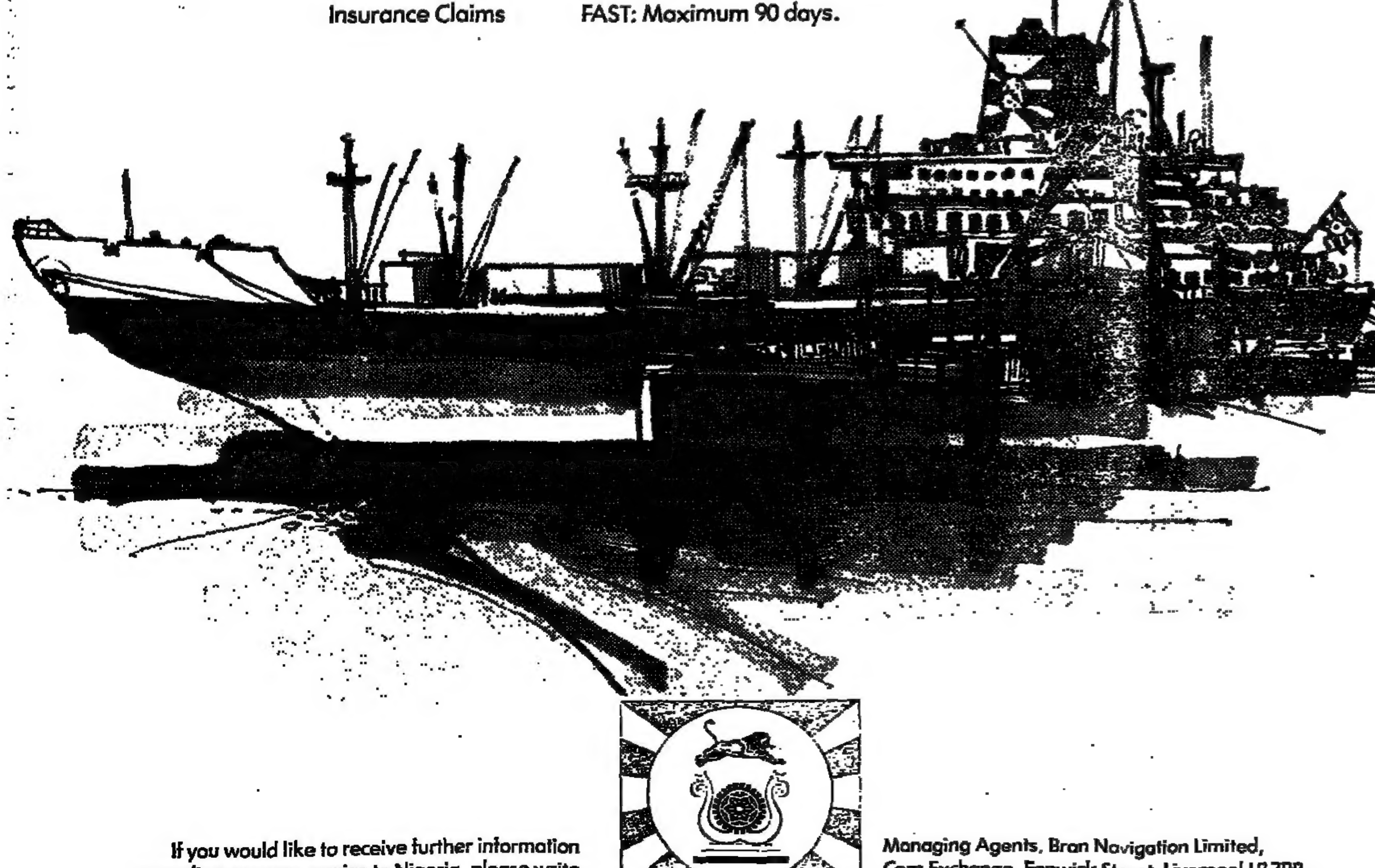

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FINANCIAL TIMES, published daily except Sundays and holidays. U.S. subscription rates $365.00 per annum. Second class postage paid at New York, N.Y. and at additional mailing centres.

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WORSENING FINANCIAL DILEMMA

BY ANDREW WHITLEY IN TEHRAN

Iran's industrial plans in ruins

LITTERED ACROSS the Iranian countryside are the hulks of hundreds of unfinished or unusable development projects.

As one Western ambassador commented bleakly, surveying his country's wrecked hopes, "Iran has become an industrial cemetery."

Less than a year after the civil disruption of the anti-Shah movement brought most site work to a halt, it is clear that the highly ambitious development programme designed to catapult Iran into the ranks of the world's top 10 nations is in ruins.

Sifting through outdated project lists to salvage what is possible the new bureaucrats of the Islamic republic apply homespun criteria combining the fashionable Western virtue of "small is beautiful" with an Islamic puritanism engendering a simpler life.

An Iranian energy expert, who used to be a foremost advocate of nuclear power, summed up this personal and national metamorphosis recently by writing in a scholarly paper that the two giant nuclear power stations nearing completion at Bushire on the Gulf should be turned into grain silos.

Joking apart, the Shah's scheme for an installed nuclear capacity of 24,000 megawatts by 1994, supplying half the nation's energy needs, epitomised the breathtaking scale of the grand vision, in which considerations of cost-effectiveness were relegated to the sidelines.

But alongside the political opposition to dictatorship came a belated gut reaction within the administrative elite itself to the very philosophies of excess, breeding a strong anti-nuclear lobby among those very Western-educated technocrats the Monarch had relied on to carry out his dreams.

The failure of the Shah's hopes for industrial take-off through massive injections of capital and foreign technology is also, in part, the failure of the Western multinationals to restrain themselves or their eager clients from indulging in inappropriate schemes.

The oil producers of the Gulf provided an unprecedented opportunity, as an industrial test-bed and as a source of potentially massive profits. But in the case of Iran the consequence has also been a level of losses unprecedented in business experience world-wide, short of a major natural disaster or a global war.

On conservative estimates, the likely loss of business for foreign concerns, only on major civilian projects in Iran, will be nearly $38bn (£18.6bn). Less readily identifiable defence contracts, and smaller scale industrial and infrastructure work would probably double that figure. Britain and the U.S. have been the hardest hit because of their heavy defence exposure, but the other industrialised countries have also all suffered badly.

The revolution caught Iran when its development effort was at its peak in terms of projects under construction. Some date back nearly a decade but only moved off the drawing board when the quadrupling of oil revenues in 1973-74 gave new life to the fifth five-year plan. The plan period ended in March, 1978, but bottlenecks and other constraints delayed completion of a high proportion of projects. Eventually they were caught up in the revolution and left to the mercy of a new regime and a very different economic climate.

Eighteen months ago the National Iranian Oil Company was talking in terms of building a new 200,000 barrels-per-day refinery every two years to meet rocketing domestic demand and to export a higher proportion of oil products. The Isfahan refinery, under construction by Thyssen of West Germany and Fluor of the U.S. was an essential element in its plans. Today the refinery stands 95 per cent complete, and the contractors are anxious to finish it off, but NIOC is said to be giving it a low priority.

Abandoned

The key highway linking north and south Iran, the 1,150 mile Qom-to-Bandar Shahpour road, is almost certainly being abandoned. Estimated to cost $2.4bn, the first contract worth more than $700m for this badly needed road was awarded last year to a consortium of America's Morrison-Knudsen and France's Jean Lefevre companies.

Now Mr. Akbar Ali Moinfar, the Minister in charge of the Plan and Budget Organisation, has decided it is no longer necessary.

On a smaller scale, one of the world's largest sugar mills, built by the Dutch near Dezful in the south-west, stands, rusting and unused several months after its completion. On oil products line to Mashad in the north-east completed last year by INTEB, a joint Italian-Iranian venture, has still to be formally commissioned by NIOC.

A $265m desalination plant at Bushire, being constructed by the Japanese, is one-third complete, but it will be a white elephant if the nearby West German nuclear plants, intended to provide its power, are scrapped, as seems likely.

This last example—projects that become meaningless if a decision to axe them is taken in isolation—is one reflected elsewhere in the Iranian industrial scene, especially in petrochemicals.

The massive Du Pont synthetics fibre plant at Isfahan is never likely to be economic without the domestic feedstock now highly unlikely to be produced in the next decade.

In the overall confusion a new element to appear is inter-administration conflict over whether or not to proceed with highly expensive projects contracted under the Shah.

Unusually, it is the technocrats of the specialist agencies, such as the Atomic Energy Organisation of Iran, and the National Iranian Gas Company, who are the most adamant about cutting their losses.

The new head of the AEOI, Mr. Fereidun Sahabi, a young engineer close to the Prime Minister and a zealous social reformer, is insisting on the cancellation of the two Kraftwerk Union nuclear plants at Bushire, despite the outlay to date of $3.14bn and the fact that they are three quarters complete. Opposition to this stance comes from the Finance Ministry and the plan and budget organisation.

At NIGC, its chairman, Dr. Ali Morshed, is taking an even stronger stand against his organisation's former prize project, the $3bn large diameter gas pipeline running from the southern fields to the Soviet Union.

Known as IGAT-2, much of the initial ordering of materials and laying of pipe has already been done. But in this case, as with the $1.3bn Kalingas LNG scheme, changes in world economics now make them much more dubious economic prospects than when they were begun.

Much more insidious than the straightforward axing of major projects is the slow death many of them are being subjected to by factors directly related to Iran's post-revolution condition.

These are:

- Indecision and prevarication by a provisional Government unsure whether it will last more than a few months and afraid to take any controversial decisions;
- Disputes over back progress payments stretching, in some cases, into hundreds of millions of dollars and going back over a year;
- The strict curbing of the number of foreigners allowed to work in Iran in future; and,
- Worker committees maintaining a stranglehold over their old operations, in league with the local security committees.

Many cases of foreign management being held hostage on their sites or within the country until they meet the exorbitant claims being put in by the workers are being reported. It is a problem the Government says it deplores but has been helpless to stop.

On the other hand, grass roots power, as expressed by worker committees within the Labour Ministry and the Government Foreign Residents Bureau, is being exercised, making it even more difficult to finish off those projects given priority by the authorities.

Insecurity

With all hope of handsome profits having disappeared, the financial dilemma for many Western companies is whether to hang on to their original contracts and keep a low profile, in the hope of recovering their debts from the clients, usually the Government: or whether to cut their losses and pull out. To stay on usually means having to carry a large idle work force as the Government has shifted its unemployment burden onto employers by insisting that the workers be kept on or given large back wage payments.

Indeed, at a time when there is little security in the land and power is in the hands of bands of discontents, unemployed workers, further agitated by the Government's blaming of foreigners for the country's problems, many corporate headquarters are having to make the difficult decision of whether or not their men should venture into the Iranian countryside at all.

For many concerns, the last straw may be the Government's insistence that back payments will not be made until contractors agree to sign a document waiving all claims arising out of the revolutionary turmoil.

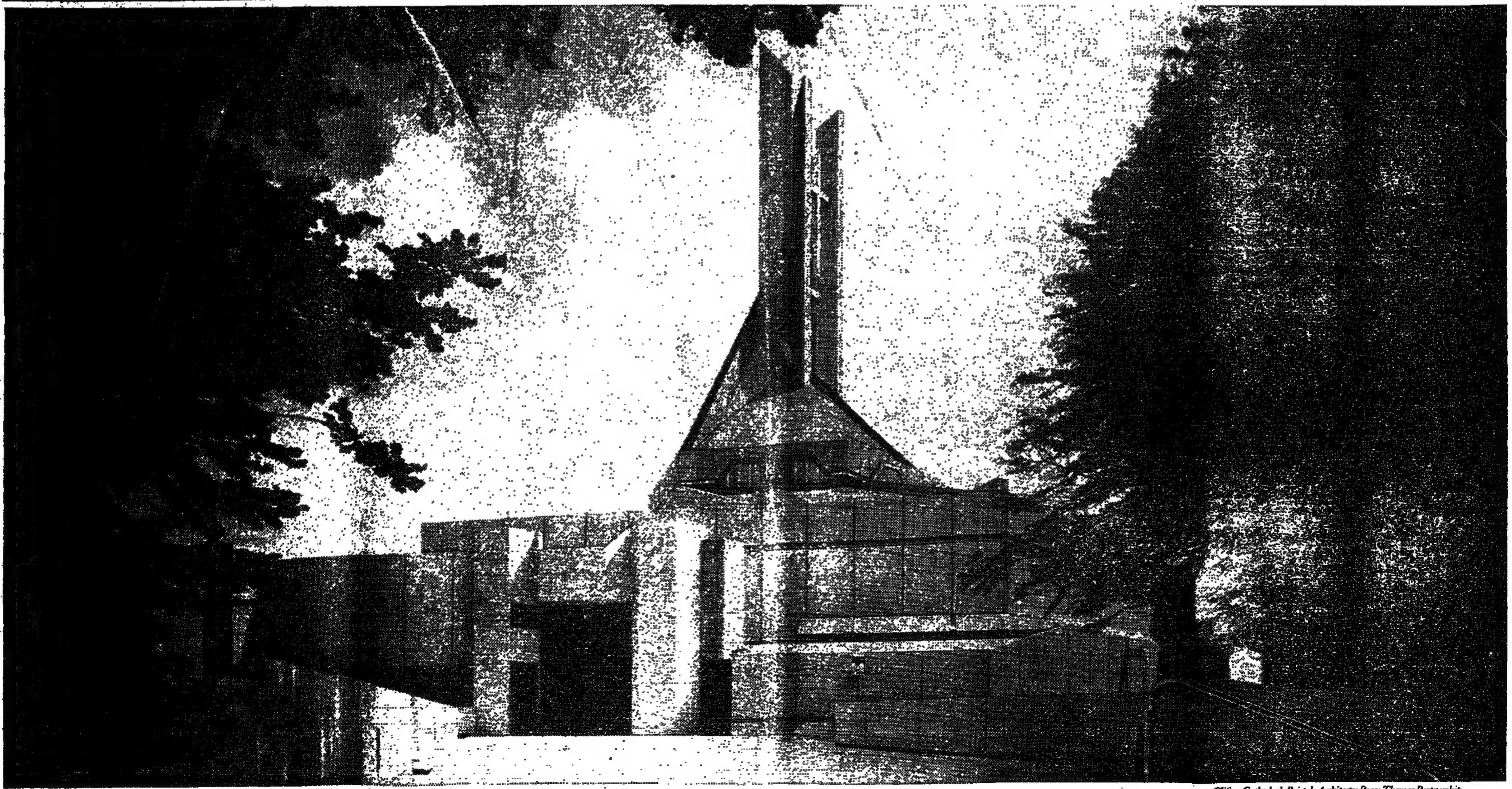
Unsurprisingly, the initial reaction of contractors has been an outright refusal to sign. Sumitomo and Furukawa, the Japanese companies building high tension power lines across the Alborz mountains to Tehran, are known to have refused pointblank.

Most Western companies, like the Iranian Government itself, will probably elect to defer any decision until the political fog clears.

On present indications, though, that day may still be a long time away, perhaps a year or more. By that time, even fewer of the unfinished projects will, no doubt, be deemed necessary and the graveyards will be fuller.

SELECTED LIST OF MAJOR DEVELOPMENTS PROJECTS IN IRAN

	PROJECT	PRESENT STATUS	COUNTRY	VALUE $bn	CONTRACTOR
1)	2 x 1,200 MW nuclear power stations, Bushire	77 per cent complete, suspended, cancellation possible	West Germany	6.9	Kraftwerkunion
2)	Gas secondary recovery/reinjection programme, Khuzestan	First phase completed. Low priority now, unlikely to resume	U.S./Britain	6.0	Ralph Parsons, Foster-Wheeler, Fluor
3)	2 x 900 MW nuclear power plants, Karun river	Site work completed. Cancellation certain	France	5.9	Framatome-led consortium
4)	Iran-Japan petrochemical complex, Bandar Shahpour	85 per cent completed. Top priority, likely completion	Japan	3.3	Mitisui-led consortium
5)	Igat-2 Gas trunkline to Soviet Union	Third completed. Suspended. Almost certain cancellation	USSR/France/Britain/Poland	3.0	Wilmeg, Spie Batignolles, others
6)	Tehran-Khorramshahr, Bandar Shahpour rail electrification	Low priority, unlikely go-ahead in near future	France/Denmark	3.0	Spie Batignolles, Kampsax
7)	1.5m tons pa steel mill, Bandar Abbas	Cancellation in balance, contradictory reports	Italy	2.9	Finsider/IRI
8)	Tehran city centre development, Shahestan Pahlavi	Already cancelled as whole project	Britain	2.6	Llewellyn-Weeks-Davies
9)	1,150 mile highway, Qom-Bandar Shahpour	Preliminary work halted. No decision to resume	U.S./France	2.4	Morrison-Knudsen/Jean Lefevre
10)	Sar Cheshmeh copper mines and plant, Kerman	Mine and initial process plant 90% complete. Work suspended	U.S./West Germany/Belgium	1.6	Anaconda/Parsons-Jurden/Krupp-Mechim
11)	Kerman-Bandar Abbas railway line	Priority. Construction tenders may be invited again	Denmark	1.5	Kampsax
12)	Electrification and doubling 400 mile railway, Tehran-Tabriz	Suspended. Go-ahead highly unlikely	Britain	1.4	Transmark
13)	Tehran Metro	Construction first stage halted. Almost certain cancellation	France	1.3	Ratp/Sofretu
14)	1.2m ton pa steel mill, Isfahan	Cancelled after award few construction contracts	Britain/West Germany	1.1	British Steel Corporation
15)	New port of Bandar Abbas	Awaiting backpayment $177m and work permits. Hopeful	Italy	1.1	Condotte d'Acqua
16)	New Tehran airport	Work stopped last autumn after site clearing. Cancelled	U.S.	1.1	TAMS
17)	Kalingas LNG project	Almost certain cancellation. Too many problems	France	1.0	Kalingas consortium
18)	Expansion overall telecommunications network	Dropped as whole project. ABI unlikely to return	U.S.	1.0	American Bell International
19)	200,000 b/d oil refinery, Isfahan	95 per cent complete. Last minute problems. Iran uninterested	U.S./West Germany	0.9	Fluor/Thyssen
20)	Aromatics plant, Abadan	Construction contracts most unlikely to be awarded	Britain	0.8	Foster-Wheeler
21)	Installation telephone exchanges and lines	Third completed. Extensive renegotiations underway	U.S.	0.8	GTE of Chicago
22)	1,760 MW thermal power station, Neka	Priority. First unit on stream summer 1979	USSR	0.7	Soviet Ministry of Energetics and Electrification
23)	2.5m tons pa sponge iron plant, Ahwaz	Russians asked to speed up work	West Germany	0.7	Brown Boveri/Deutsche Babcock
24)	1,260 MW thermal power station, Ahwaz	75 per cent completed. Work stopped but likely to resume	U.S./Britain	0.5	Easier/Swindell-Dressler/Foster-Wheeler
25)	Shipbuilding/dry docks complex, Bandar Abbas	Drydocks — pessimism: shipbuilding — some hopes	South Korea/West Germany/Spain	0.5	Hyundai/Blohm and Voss/Dragados



Clifton Cathedral, Bristol. Architects: Percy Thomas Partnership.

Who built the economy Cathedral?

Cathedrals and shoestring budgets seldom go happily together. Building to man's immortal spirit is no time to cut corners.

However, the Roman Catholic Diocese of Clifton, Bristol, did not possess limitless funds. All they had was an unpromising site in a Victorian residential area. What the Diocese achieved was a building of rare beauty, with a noble hexagonal nave seating 1,000, eminently suitable for all liturgical functions, a 'fleche' soaring 165 feet to the heavens, and even an unobtrusive car park for 100 cars.

The material was concrete – a medium not normally associated with great architecture dedicated to the glory of God. The cost was well below a million pounds – an amazingly low sum for a building which will be an inspiration throughout its 1,000-year life span.

The builders were John Laing, not for the first time showing their adaptability and the understanding of an architect's problems which have helped make them one of the biggest construction companies in the world.

Clifton Cathedral won the Concrete Society Award. The Judges commented: "The high standard of workmanship makes the detailing of the structure a pleasure to see at close quarters. It is a building where design and execution have gone hand in hand to create architecture."

It was also a building where Laing had the satisfaction of helping make a *beautiful* idea take shape.

LAING
make ideas take shape

Liberal optimism in Liverpool

BY JOHN HUNT, PARLIAMENTARY CORRESPONDENT

IN THEIR manifesto for the European elections the Liberals confidently predict that they will win more British votes than in the recent General Election. Certainly, they will need to do so in order to win Liverpool, a city which is high on the list of target areas where they believe there is a chance of victory.

The Liberals base their optimism on the much publicised success which the party has achieved in the local elections for the Liverpool City Council over the years. Although they have not had an overall majority on the council they have controlled it over four years during the 1970s. On top of this came the surprising Liberal by-election victory by David Alton in the local constituency of Edge Hill earlier this year.

In this area of high unemployment and urban blight the Liberals have built up a formidable body of support by exploiting local grievances. They believe that this method can win the European seat for the Liberals next week.

A cool look at the statistics, however, shows the magnitude of the task. Eight of the city's constituencies, with the addition of Bootle, have been merged into one for the European vote. Of these, Labour holds six and the Tories two. The Liberals retained Edge Hill in the general election but their majority was halved. The Labour general election vote throughout the Euro-constituency was 164,000, the Conservatives 112,000 and the Liberals 45,000.

The Liberal candidate, Paul Clark, a local solicitor, believes that this pattern will not be repeated in the Euro-poll. He maintains that in the General Election the odds were weighted against his party by the "presidential" nature of the campaign and by the voters' knowledge that the Liberals could not form a government.

Needless to say the other candidates, Cloria Hooper, Conservative, and Terry Harrison, Labour, will have none of this.

Mr. Harrison, a self-proclaimed Marxist who sits on the Board of the Left-wing paper, The Militant, has no doubt that the Tories are his main enemy. His election slogan has a simple brutality — "Fight the bosses' EEC." His opponents are eager to highlight his Marxist beliefs but he dismisses their taunts as "the last resort of political cowards." Nevertheless, he is quick to disclaim responsibility for the bust of Lenin and the pennants from the East German Republic which decorate the offices of the trades council where he meets the Press.

He exudes a socialist puritanism and quivers with indignation as he describes a trip to Luxembourg to meet other European Socialists. "I never saw such luxury — 26 quid a night bed and breakfast."

Over at the Tory committee rooms the organisation seems to be running smoothly despite the recent plethora of elections. Miss Hooper, a laweyr with international experience, is placing great emphasis on the amount of aid which Merseyside, an assisted area, has received from the European Regional Fund.

With the decline of the Atlantic passenger service into the port of Liverpool the city has looked with envy at the growing prosperity of the southern and eastern ports which has resulted in the growth of trade with the EEC. To counter this Miss Hooper emphasises that the development of the Community will bring increased wealth to all parts of the UK, including the North West.

Canvassing at an old people's home earlier this week there was a polite response until one military-looking gentleman announced that he had voted in the referendum against British membership of the EEC. This seemed to be the signal for a remarkably bitter outbreak of anti-European sentiment.

"The French are twisters . . . what about food prices? . . . they all cook the books. . . ."

Conscientiously Miss Hooper explained that direct elections could help put these matters right. As she departed the matron confided that in her view the South had received all the benefits of membership and that the North West had voted solidly against the EEC in the referendum.

Luxembourg's national election could influence Europe

BY GILES MERRITT, RECENTLY IN LUXEMBOURG

THE OUTWARD signs of electioneering in Luxembourg are small and tidy. Neat little billboards about 4ft square have been erected — not too conspicuously — around the Grand Duchy and candidates' posters are arranged on them in what looks like a finely calculated share-out of space. Posters are not defaced, and it seems they are never obliterated by a rival sticker.

Yet underneath this decorum, Luxembourg is in the throes of two election campaigns. On Sunday, June 10, Luxembourg will vote in both a general election and the Parliamentary Euro-election. Both polls have important implications for the country and are closely intertwined.

Luxembourg is physically and figuratively the epicentre of the Common Market. It is host to the secretariat of the European Parliament, and the majority of the Assembly's sittings have been here. The complexion of the 404 Euro-MPs to be elected in the other member states is perhaps more important than the six seats to be filled by Luxembourg. But the outcome of Luxembourg's national election could influence the future of the European Parliament.

It sounds paradoxical, but the explanation is simple enough. M. Gaston Thorn, the Luxembourg Prime Minister, faces the possibility of losing office in the general election. If he is defeated he has indicated that he would accept the post of president of the directly-elected European Parliament, in which position he could become the formidable champion of a more powerful assembly.

How the two elections will turn out, however, is far from certain. Democracy in the Grand Duchy operates on the same cumbersome system as Belgium. Taking the effects of proportional representation to their logical extreme, Luxembourgers now bemoan the fact that they cannot be sure their votes will not have the opposite effect to that intended.

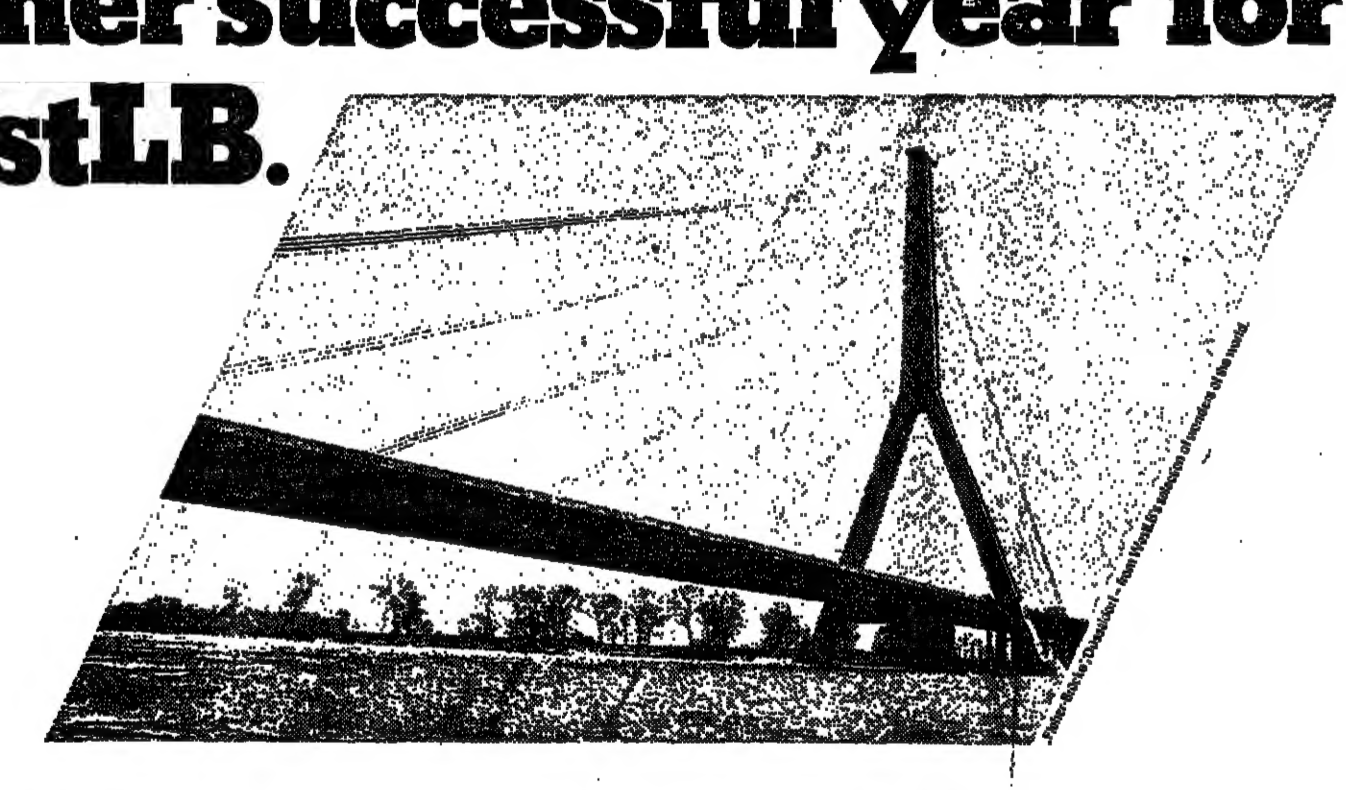
The absurdity of the situation is exaggerated, but the fact remains that Luxembourg elections are increasingly inscrutable. The result of the 1974 general election that unseated the dominant Social Christian Party after 50 years of uninterrupted power confounded all the pundits. By much the same token, M. Thorn, himself the Liberal leader of a Socialist-Liberal coalition, hopes that the widespread expectation of a coalition defeat will be wrong.

His Government's view is that Luxembourg has no reason to replace an Administration that during its five-year term has successfully ridden out an international recession. Inflation and unemployment are low, at 3.7 per cent and less than 1 per cent respectively, and last year motor car registrations in the country hit new records. The issue, say Ministers, is not prosperity but whether or not Luxembourg should be rulled by a single, self-perpetuating Party machine. They charge that the Social Christians, with their large budgets and their control of Luxembourg's most powerful newspaper, are concerned that the voters should not develop a taste for a two (or more) party system.

One suggestion is that the former Prime Minister, Social Christian M. Pierre Werner, miscalculated when in 1974 he invited M. Thorn to attempt to form a coalition. He did not believe a Socialist-Liberal alliance was possible, let alone durable.

It is not a mistake he is likely to make again if an anti-coalition "landslide" of two or three seats takes place.

1978
Another successful year for
WestLB.



Facts 1978

WestLB's figures for the business year ending December 31, 1978, are proof of continuous achievement:

Consolidated Balance Sheet: DM 93.3 billion
Earnings after Taxes: DM 152.0 million
Total Capital Funds: DM 2.14 billion
Total Group Business Volume: DM 128.2 billion

International Business Highlights

WestLB again strengthened its position as a strong force in international financing.

In the Eurobond market the Bank ranked again among the most active issuing houses, lead managing 33 issues amounting to US $ 1.5 billion and co-managing another 63 issues amounting to US $ 4.0 billion.

In Euroloan syndication WestLB managed 59 and co-managed 25 loans amounting to US $ 17 billion.

As a result of its particular strength in the German domestic capital market WestLB played a major role in providing long-term fixed-interest DM loans to foreign borrowers.

Growth in Domestic Lending

Lending on the domestic markets rose by 10% to DM 74.5 billion. There was expanding demand for long-term fixed-interest funds. This growth was due to increased corporate lending as well as export and leasing financings. Substantial growth in building financings and also in state and municipal loans further fortified WestLB's traditionally strong position in the domestic market.

Funding increased in line with lending expansion. The volume of WestLB bonds in circulation rose by 16% to DM 33.7 billion, thus broadening WestLB's main funding base. Client deposits advanced 6% to DM 20.9 billion while bank deposits grew 12% to DM 25.6 billion, including US $ 714 million in certificates of deposit.

First quarter results in 1979 are commensurate with WestLB's leading position in international finance.

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Holidays record predicted by poll

BY ARTHUR SANDLES

MORE BRITONS than ever intend having a holiday this year, and so many people plan to go abroad that foreign travel could top pre-recession levels, which could have ominous implications for the UK's until-now profitable tourism account.

This year's holiday intentions survey, done for the English Tourist Board by NOP Market Research, shows that 64 per cent of the British plan to holiday somewhere this year. This compares with 59 per cent who expressed the same intention 12 months ago.

This is good news for both home tourism and the UK's foreign markets, but the survey indicates that travel abroad is likely to rise faster than domestic trips.

British travel within the UK has remained a constant 40 per cent of a fluctuating market for the past five years. England's individual share this year, however, looks like going up from 27 per cent to 28 per cent of the total.

Travel abroad will probably increase from 15 per cent of the population to 19 per cent. Among higher income managerial groups 81 per cent plan a holiday of some sort, a third of the total intending to go abroad.

A striking feature of the survey results is the high intention of taking long holidays.

Pollsters suggest that "the main holiday season in Britain will be about as prosperous as in 1978."

Tories told of industrial needs

By Michael Cassell

THE GOVERNMENT will fail to revitalise Britain's economic and industrial performance unless sufficient resources are used to maintain and improve the basic services on which manufacturing industry depends, according to the Federation of Civil Engineering Contractors.

In a paper sent to Sir Geoffrey Howe, Chancellor of the Exchequer, and Mr. Michael Heseltine, Secretary for the Environment, the federation warns that unless the infrastructure needs of the economy are accorded proper weight in the public expenditure balance, policies aimed at restoring the vitality of the private sector will be thwarted.

The federation, with other representatives bodies from the construction sector have, since the General Election, been urging the Government to withstand the temptation to use the industry as an easy target for expenditure cuts.

They have pointed out the effects on construction of a long series of debilitating expenditure reductions and emphasised that its longer-term strength and capability would be irreversibly undermined if further cuts in workload were made.

But in spite of its efforts, the industry expects to be hit in the Budget, having been warned by Mr. Heseltine that his department will have to bear its share of the all-round spending cuts being sought. Housing programmes in particular are expected to be affected.

- Mr. Ian Robey, president of the Builders Merchants Federation, said at the weekend that urgent action was required to tackle the deterioration of the existing housing stock. He told the Federation's annual conference in Crete that revision of the renovation grant scheme was a top priority and called for action to encourage higher levels of new housebuilding.

Fewer dry cargo ships laid up

By Ian Hargreaves,
Shipping Correspondent

THE VOLUME of UK dry cargo shipping idle last month fell to its lowest level for four years.

Seasonal and cyclical factors are combining to draw an increasing number of dry cargo ships out of lay-up according to figures published today by the General Council of British Shipping.

The world total of idle dry cargo ships has also been falling steadily in the past year, with 371 ships totalling 5.4m deadweight tons idle at the end of April, compared with 14.4m dwt a year ago.

This means that 2 per cent of the world dry cargo fleet is idle.

In the UK fleet, only 15 dry cargo ships remain idle, representing 1 per cent of the total, although this trend has been assisted by heavy sales of dry cargo ships to foreign flags.

Laker starts battle to end restrictions on Skytrain services

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

LAKER AIRWAYS starts a major battle this week, to try to get all restrictions on its low-fare Skytrain services to New York and Los Angeles removed.

The airline, whose services from Gatwick hitherto have been confined to a no-reservations basis, is asking the Civil Aviation Authority to allow it to accept forward bookings, to carry cargo, and to offer several varieties of cheap fares instead of the one fare (£59 single to New York) permitted.

The proposals, if approved, would convert the Skytrain into a normal scheduled-type service, but at cheaper fares, offering severe competition to British Airways and to British Caledonian.

Both airlines are objecting to the Laker plan, and it is expected that this week's hearing by the Civil Aviation Authority, starting on Wednesday, will continue into Thursday.

- Many major airport authorities world-wide meet at the Cafe Royal in London tomorrow, at the sixth World Airports Conference, to discuss the problems posed by the expected expansion of traffic through the 1980s.
- The first production version of the Anglo-West German-Italian Tornado multi-role combat aircraft, will be rolled out of British Aerospace's Warton, Lancashire factory, tomorrow, in the presence of Mr. Francis Pym, the Defence Secretary. The three countries will build 809 of these aircraft through the 1980s.
- The Government has authorised a further payment on account of £1.05m in respect of compensation for Scottish Aviation. This brings the total payment on account made in respect of this company to £2.1m.
- A £10m radar system went into operation on Friday at RAF Saxa Ford, the early warning station in the Shetland Islands.

The search and height-finding radar—installed by Marconi Radar Systems and Plessey Radar—will make a significant contribution to improved air defence for the UK and NATO.

DC-10 operators not to sue manufacturer

BY IAN HARGREAVES

LAKER AIRWAYS and British Caledonian could eventually seek compensation for financial losses caused by the grounding of suspect DC-10 aircraft, but neither company intends to sue McDonnell Douglas, which manufactures the jet.

Both companies yesterday strongly denied reports of possible legal suits and said it was too early even to assess the scale of losses caused by extra safety checks on their DC-10s.

Laker said it might seek compensation through insurance channels once the inquiry into the crash 10 days ago of an American Airlines DC-10 at Chicago was complete.

According to Laker, however, passenger anxiety following the accident has made no impact on Skytrain's transatlantic business. "Loadings are good, although we get the odd personal inquiry about the accident," the airline said.

British Caledonian said that preliminary returns for last week showed a dip in traffic, but the indications were that by the end of the week business had started to climb back towards normal loadings.

Meanwhile Varig, the Brazilian airline, has signed a $270m contract for five more DC-10s. It already operates four similar aircraft. This is the first DC-10 order to be announced since the accident in Chicago.

Feature Page 15

Lloyd's committee studies brokerage

BY JOHN MOORE

AN EMERGENCY inquiry has been launched by the Committee of Lloyd's of London into the affairs of a subsidiary of Christopher Moran Group, an insurance brokerage.

The move follows an approach to the 16-strong Lloyd's committee by auditors of a medium-sized underwriting syndicate.

The auditors told the Lloyd's committee that they were unhappy that Christopher Morgan and Company had not complied with the terms of a binding authority. A binding authority is an authorisation to accept business on behalf of the syndicate up to certain agreed limits.

The auditors are concerned that discounts and profits commissions may not be in accordance with the terms of that authority.

The binding authority allowed Christopher Moran and Co. to accept aviation reinsurance business up to certain limits.

The inquiry team is headed by Mr. Paul Dixey, a former chairman of Lloyd's, and consists of an underwriter, an insurance broker and an auditor.

Mr. Dixey's team has been studying the matter for the past four weeks, and completion of a report that will be studied by the Lloyd's committee is expected in the next two or three weeks.

Meanwhile a City of London Police fraud squad investigation is in progress over reinsurance transactions, arranged in the mid-1970s, in which the Christopher Moran Group's Lloyd's subsidiary acted as broker.

Papers relating to the investigation are expected to go before the Director of Public Prosecutions at the end of this month at the earliest.

Christopher Moran Group is quoted on the London stock exchange and has a stock market value of £6.4m. In its last reported financial year, to January 31, 1978, it declared pre-tax profits of £1.76m.

Local authorities step up use of leasing

BY MICHAEL LAFFERTY

LOCAL AUTHORITIES are getting around Central Government restrictions on capital expenditure through increased use of leasing. Lease payments are classified under revenue expenditure, which is subject to less stringent cash limits.

The much increased use of leasing is admitted by local authority representatives and City-based lease broking firms. However, the full exent to which the authorities are acquiring capital items, such as equipment and refuse vehicles this way is not known.

Mr. Ian Coutts, chairman of the finance committee of the Association of County Councils, suggests a maximum scale so far of £400m for England and Wales. This would amount to about an additional 10 per cent of capital expenditure by the authorities this year.

Mr. Peter Jasilkowski, head of R. P. Martin Leasing, one of the leading lease brokers in the local authority area, believes the maximum figure is closer to £250m a year.

The official Treasury attitude is that the Government frowns on the practice, though no action is contemplated while the scale is thought to be fairly limited.

Leasing also allows local government to benefit from tax allowances given to the corporate sector, which in theory could reduce the cost of capital equipment leased by as much as half.

However, in practice the tax saving is shared between the industrial company providing the "tax shelter," the lease broker and the authority concerned. Nevertheless, the interest cost of finance can be cut, for instance from 12 to 8 per cent, by arranging a lea rather than outright purch

Mr. Coutts says leasing very much on the increa among the 47 county councils in his association, though he disapproved of it. It was a way of getting round Government limits.

Several people concerned with leasing say that local authorities are under considerable pressure to lease capital items. One broker spoke of an authority which even leased all its dustbins.

Last week a new lease-broking firm was formed to specialise firm was formed to specialise specifically in the local authority area. The company, Udisco Minet Leasing, is forecasting minimum leasing turnover of £36m in its first year, giving it gross fees of about £100,000.

Survival appeal raises £50,000

A PUBLIC ppeal launched three week go has raised £50,000 for e Rare Breeds Surviv Trust.

Mr. nis Vernon, the trust secretary, of Appleby Castle, said members hoped to raise £100,000 for promoting and building up trust collections throughout Britain.

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Reinsurance brokers blamed for friction

By John Moore

REINSURANCE BROKERS often cause friction between themselves and London underwriters, according to the Mercantile and General Reinsurance Company, the UK's largest reinsurance group.

Mr. Julius Neave, the company's general manager, said in a paper delivered to the Australian Insurance Institute in Melbourne, that a frequent cause of friction between reinsurance brokers and London underwriters arises from the movement and handling of cash between the parties.

The broker often keeps the funds remitted to him by the insurance concern that is to be reinsured "for an undue length of time before passing them to the reinsurer in order to gain for himself the interest to be earned" on the funds held.

"So attractive have yields been on short-term cash that the temptation of prolonging the delay in remitting has all too often proved irresistible, and reinsurance underwriters have remained waiting for the balances due to them for an unreasonable length of time."

Mr. Neave added: "Many unsuspecting insurers from overseas have been attracted into the London market" by easy accessibility to international reinsurance business through an underwriting management company.

The service, offered by reinsurance brokers, provides an underwriting facility for overseas companies that do not wish to establish local offices.

"These organisation rely solely on brokers for the production of their business and are often, but not always, established by broker houses and may underwrite for one or more admitted overseas reinsurers.

"The underwriter is remunerated by a commission charged on turnover and the passive carrier, relying on the underwriting result, is thus dependent on two operators active in his interest, neither of whom carry any part of the risk but both of whom themselves live on generating turnover."

Through that method, many overseas reinsurers "have turned their fingers to the one." Mr. Neave said.

Domestic demand 'set to fall after summer'

BY DAVID FREUD

THE PRESENT recovery in domestic demand will not be sustained beyond the summer, according to de Zoote and Bevan, the City stockbrokers.

The rate of growth of economic activity will thus drop and, in contrast with previous recessions, the balance of payments is likely to worsen.

The firm says that all measures of the real money *supply suggest that unemployment* will begin a rising trend in the late summer or early autumn that is likely to be sustained next year.

Accumulation of personal savings may prove, yet again, to be one of the prime recessionary *forces, at least in the early stages* of the cyclical downturn.

The firm points out that, on *its index, the rate of inflation* continues to exceed that expected, a condition that has led to increased personal savings *in the past. Furthermore, net* inflows into building societies have risen without the encouragement of a more favourable interest rate differential.

The build-up of personal savings will considerably depress consumer spending, especially durable spending, over the next year.

The balance of payments is very likely to contradict precedent and follow a declining trend over the coming recessionary year, de Zoete says, reflecting one of the more vivid aspects of "Dutch" disease.

"This year the UK's plentiful supply of highly priced oil has raised sterling and provided substantial benefits to the balance of payments. But it has also raised the external price of UK goods at precisely the time when world economic activity and *trade is going into decline.*"

Short-lived

The result, according to the firm, will be a reduction in the rate of growth of exports, especially those of non-oil goods, which will be greater than the rate at which world trade and the UK's imports fall away.

Indeed, the present appreciation of sterling will provide a sharp boost to the UK's import propensity.

Capel-Cure Myers also believes that the recovery in domestic demand and economic activity is likely to prove shortlived.

It argues that the trend is unlikely to be sustained into the second half of the year in view of the deteriorating prospects for the world economy and further signs of the erosion of UK competitiveness.

Phillips and Drew, stockbrokers, like de Zoete, present a gloomy view of the prospects for the UK's balance of payments.

It says that the recent rise in oil prices is likely to precipitate a recession in world trade growth. It expects international trade to expand by only 3-3.5 per cent next year after 5.5-6 per cent this year.

"Such a slowdown can be expected to have a substantial adverse effect on UK non-oil *exports, whose price competitiveness* on world markets is in any case hit by the continued strength of sterling.

"By contrast, import penetration will probably increase further as import substitutes improve their competitive position relative to home production, and overseas manufacturers become keener to export as world activity slows."

The firm believes that the Chancellor will aim at a public-sector borrowing requirement of about £8bn in the 1979-80 financial year, as that would be consistent with sterling M3 growth of a little below 10 per cent.

To achieve the borrowing target requires deflationary measures of about £2.5bn in the forthcoming Budget, and with their fiscal policy and the sluggish world economic background the firm says UK economic activity is set to slow down sharply over the next 18 months.

Lines link to cut Gulf tonnage

BY IAN HARGREAVES, SHIPPING CORRESPONDENT

PENINSULAR AND Oriental Steam Navigation Company has, with five other prominent shipping lines, acted to reduce costs and consolidate tariffs in key services between Europe, UK and the Middle East.

P & O, which has suffered two years of unprofitable or marginal rates on Gulf services, where there is much surplus capacity, is to combine services with Ellerman, also of Britain, DDG Hansa of Bremen; Nedlloyd of Holland; Compagnie Maritime Belge; and the United Arab Shipping Company of the Gulf.

The deal covers container and conventional cargo ships and will permit the lines in the medium term to reduce tonnage on the service by a fifth.

It should also help to consolidate rates, which have improved slightly in the past year but which are still not high enough to cover the costs of the more modern tonnage on the route.

Together, the six companies account for considerably more than half of UK-Middle East sea trade.

They have suffered from a proliferation of smaller rival services since the rapid economic growth in oil-producing countries started in 1974.

About 80 lines are estimated to be plying between the Continent and the Middle East and about 15 between the UK and the region.

Further difficulties have been caused by the revolution in Iran, which was responsible for a quarter of P & O's liner business.

In spite of Iranian difficulties, however, the lines involved in the new consortium report that ships for the region are still full to more than 90 per cent of capacity.

Fiesta in short supply in UK

By Kenneth Gooding, Motor Industry Correspondent

PRODUCTION difficulties in Spain and the UK coupled with continued high demand have left the British market very short of Ford's small car, the Fiesta.

Ford sold 1m Fiestas in Europe and elsewhere in the first 28 months after it was introduced in 1977. The car is assembled at Dagenham, in the UK; Valencia, in Spain; and Saarlouis, in West Germany.

However, output at Valencia and Dagenham is failing to meet schedules.

In Spain, the employees continue to refuse to work a Saturday morning shift and a strike occurred on May 22.

The Dagenham plant has been falling short of planned targets, affecting output of the Cortina, the UK's best-selling car, and the Fiesta.

Because the waiting list for Cortinas was lengthening, and probably because the bigger car carries a bigger profit margin, Ford has considerably cut back Fiesta production at Dagenham to concentrate on Cortinas.

Ford said at the weekend that it would be wrong to blame Fiesta shortages entirely on production difficulties. "Even if we were working flat out there would still be shortages of Cortinas and Fiestas."

Registrations of Fiesta cars and light commercial vehicles have totalled between 6,000 and 7,000 a month for some time in the U.K.

The model made a dramatic impact on Ford's fortunes in Europe last year taking fifth place in European sales, with 346,138 registered.

Checklists aid to sales

BY LISA WOOD

THE British Institute of Management has published two management checklists to help members recognise their competitors and customers.

Entitled Know Your Customers and Know Your Competitors, the checklists suggests several basic questions which need to be answered by those responsible for marketing and selling.

High price of dispute at BSC'S £100m terminal

BY ROY HODSON

THE INTER-UNION dispute preventing iron ore deliveries to the British Steel Corporation's new £100m deep water terminal at Hunterston on the Clyde was described yesterday by Mr. J. G. Stewart, managing director of the corporation's Scottish division as "the sort of thing we can't afford in Scotland."

Up to £12m a year will be saved on the corporation's ore import bill when the terminal can be brought into use. Meanwhile, ore to feed the Scottish steelworks is still imported through Glasgow docks at an extra cost of £3 a tonne to the corporation over the handling costs of the new terminal.

The Hunterston terminal and the associated direct reduction (DR) plant for iron ore which is costing a further £60m, will be officially opened on Tuesday by the Queen Mother, who will arrive at the terminal in the Royal yacht Britannia.

But the ore stock yards which stretch for nearly a mile along the bank of the Clyde will be empty during the ceremony. No ore has been delivered because of the dispute although the terminal has been ready for more than a month.

Mr. Len Murray, general secretary of the TUC met representatives of the two unions in dispute in London last week. They are the Iron and Steel Trades Confederation and the Transport and General Workers' Union.

Attempts to find a solution under Mr. Murray's chairmanship failed. A further meeting between union officials is to be held in Glasgow within a few days. The argument is over approximately 100 new jobs to man the terminal on a shift basis.

British Steel says it has the agreement of the Clyde Port Authority that the job of operating the ore unloading equipment should be done by steelworkers, as it is already being done in the Glasgow docks. Under this arrangement dockers would handle work on board ships. However the TGWU says all the jobs at Hunterston terminal should be filled by dockers.

Bigger carriers

The ore terminal is designed *to handle bigger ore carriers* than have yet been built. Ships of up to 350,000 tons are envisaged to bring high grade ore from Brazil and Australia.

The terminal is one of the finest installations in the world for handling bulk shipments of ore or coal. It is sited on deep water and can take bigger ships than any other European terminal. The jetty has a 100 ft depth of water alongside and it could be extended to 160 ft.

A European role is foreseen for the terminal with bulk loads of ore being transhipped into smaller vessels for delivery to Continental steelmakers. British Steel will be able to partly unload 200,000-ton ore carriers at Hunterston to reduce their draught before sending them on to shallower ore terminals at Teesside, and Port Talbot, South Wales.

British Steel is expected to take a policy decision soon on whether or not to put the DR ore plants at Hunterston into production. The two plants, built by the Korf group, each have the capacity to make 400,000 tonnes a year of DR pellets.

Commissioning will depend upon the likely market price of scrap steel during the next few months and the general state of the steel market.

Scrap prices have been rising in recent months. If they settle at £65 a tonne it is likely that British Steel will start making DR ore at Hunterston and will sell it as a competitive raw material to scrap steel for steelmaking.

The basic market for DR ore (which is 93 per cent pure iron) will be British Steel's own electric arc furnaces in the Sheffield area. But several private sector steelmakers operating mini-mills in Britain are also interested in buying the DR material. There is also the possibility of selling further quantities on the Continent.

It is likely that British Steel will test the market for DR ore by starting up one of the Hunterston units during the next 12 months. A nine-month recruiting and training period will be needed to prepare the plant's 160 workforce.

It is unlikely, therefore, that the new steelmaking material will be available for sale outside British Steel before early next year.

Accountants fear poor turnout

BY MICHAEL LAFFERTY

LEADING accountants are worried that a poor turnout at the profession's first public hearings on accounting standards could be damaging to the profession.

So far only a handful of notifications to speak at the hearings have been received, and the closing date for giving notice to attend is Friday.

Deloitte Haskins and Sells is the only leading accounting firm which has yet given notice of its intention to attend. It is also expected that Arthur Andersen, Peat Marwick Mitchell, Touche Ross, Thomson McLintock, and Arthur Young McClelland Moores will be speaking. But major firms which will not be taking advantage of the opportunity to put their views — and be cross-examined in public—include Coopers and Lybrand, Price Waterhouse, and the newly named Ernst and Whinney (which includes Whinney Murray and Turquands Barton Mayhew).

One of the few individuals who has given notice to speak is Professor Edward Stamp, from Lancaster University. His criticisms of accounting practices in the late 1960s led to the formation of the Accounting Standards Committee by the leading accounting bodies.

The hearings are part of a scheme to review the ASC's standard-setting role. They are planned to take place in Dublin on July 5, in Glasgow on July 11, and in London on July 19 and 20.

LOOKING FORWARD TO 1980 AND BEYOND:

A COMPANY PROFILE

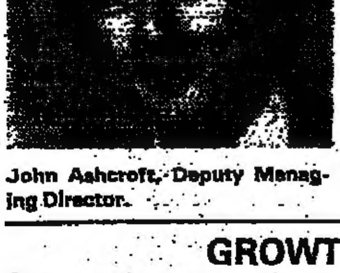
Coloroll: Europe's Fastest Growing Wallcoverings Manufacturer

John Bray, Managing Director.

Teamwork: The Key

"Strong management through teamwork is the key" says John Bray, Managing Director of Coloroll. "I believe in getting the right team around me committed to, and believing in, what they're doing.

John Ashcroft joined me in September of last year and has been heavily involved in the re-structuring of the company to prepare it for the further phase of expansion that is beginning this year. From now on he will assume greater responsibility for running the business leaving me freer to investigate areas of future development".



John Ashcroft, Deputy Managing Director.

Coloroll, the fastest growing manufacturer in the wallcoverings/D.I.Y. market in the U.K. and Europe, is proof that manufacturers, too, can benefit from Britain's D.I.Y. boom that has provided such spectacular growth for the multiple retailers like Homecharm, B. & Q., A. G. Stanley and L.C.P.

In the past three years Coloroll's wallcoverings sales have trebled. To support home sales expansion, the company has developed a thriving export business with continuing substantial growth indicated for this year.

The strength of the *company lies* in entrepreneurial drive, strong management, teamwork and a £3 million investment programme over *a 2 year period to provide the strong* base that will place the company among the leading manufacturers in the U.K.

The driving force in the company is Managing Director John Bray, who joined Coloroll in 1969 at a time when the company had a turnover of less than £1 million. Last year's turnover reached £11 million.

The Coloroll story began in 1923 when the company was first established as a paper merchanting business. By the late 60's the firm's base had moved to Nelson, Lancashire and it had become involved in manufacturing paper packaging and fashion carriers, supported by involvement in wallcoverings.

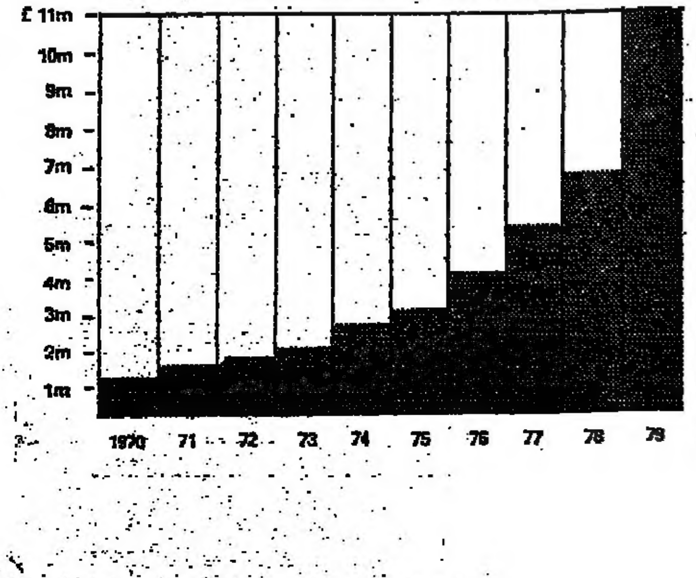
An analysis of the wallcovering industry at that time indicated a substantial volume market, dominated by Wallpaper Manufacturers Limited, but also supporting a plethora of smaller manufacturers. Marketing techniques were ageing and the wallpapers offered to the public had not changed substantially for some time, much of the industry's output was still printed on original, late 19th Century machinery.

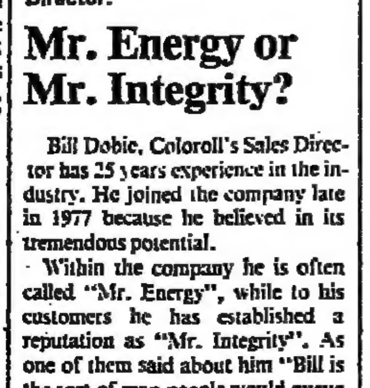
Coloroll's modern, high speed flexo printers were switched to the manufacture of wallcoverings, not however to produce large collections for passive distribution by the trade, but to concentrate on 'own brand' collections for marketing by major retailers.

The pattern of retailing was beginning to change in D.I.Y. and wallcoverings, just as it had in foodstuffs. The progress of the large multiple retail specialists like Homecharm, A. G. Stanley and Decormecca was beginning to gather momentum and in Coloroll the multiples found a source of well designed, low cost, high volume, 'own brand' collections.

For John Bray, 'own brand' was a means to an end. It was a means of low cost entry into the market providing high volume to generate in*vestment capital which could be put* back into more machinery. In 1975, 95% of turnover was 'own brand' but by 1977 the proportion had *fallen to 50% as the company began* to develop its own design identity with collections by Linda Beard and John Wilman.

Today, just over 12 months later, less than 5% of Coloroll wallcoverings turnover is 'own brand' merchandise and the company seems poised for another quantum leap in the next year, having invested £¾ million in design, creation and origination of new ranges and over £1 million to increase to 10 the number of its modern Gravure/Flexo printing machines.





Bill Dobie, Coloroll's Sales Director.

Mr. Energy or Mr. Integrity?

Bill Dobie, Coloroll's Sales Director has 25 years experience in the industry. He joined the company late in 1977 because he believed in its tremendous potential.

Within the company he is often called "Mr. Energy", while to his customers he has established a reputation as "Mr. Integrity". As one of them said about him "Bill is the sort of man people would queue up to buy a second hand car from".

A 50 man (and woman) team is being built under his direction. This will incorporate three separate units — national accounts, retail sales and tele-sales groups.

"Whatever happens, this year we will certainly have the firepower to give our customers, our competitors and the market place all the attention they deserve" says Bill Dobie.

£¾m investment in this year's new designs

The Coloroll investment in the origination, design and development of new vinyl and wallpaper ranges is in excess of £750,000. Responsibility for this work is that of John Wilman, probably the industry's top designer in his area, who joined Coloroll in 1977. "It was refreshing to enter an environment in which people realised the priority that must be given to good design and colouring, if real sales volume is to be achieved" John Wilman explains. "What our customers are buying is design and ultimately it is good design that makes the sale. We place great importance on selecting the right design and colour combinations to make up the final Coloroll collections that we introduce to the market".

John Wilman, Art Director.

DOLLY MIXTURES by Linda Beard

the sweetest thing in home decorating

In 1978, Coloroll launched its Dolly Mixtures collection of coordinated wallpapers and fabrics, designed by Linda Beard. This was an instant success and became accepted as the pacemaker in a new concept of home decoration, coordinating designs and colour, used in a myriad of household products such as bed covers, sheets and pillowcases, blinds and curtains, lampshades and kitchen textiles. A recent independent retail survey adjudged Dolly Mixtures "an outstanding success".

Linda Beard sums it up this way: "In designing Dolly Mixtures I have tried to appeal to a broad section of the public so that, even if people do not have a great deal of money, they can find something stylish".

Linda Beard's new collection, 'Dolly Mixtures, too' is released this month and promises to be an even bigger success. "These designs are for those people whose ambition it is to live in a sunny summertime atmosphere all year round. We are offering a rainbow of colour — sea shell pinks, cornflower and lavender, blue as clear as summer skies, lilac, meadow green and buttercup yellow".

The message is spreading: "fun is back in home decor".

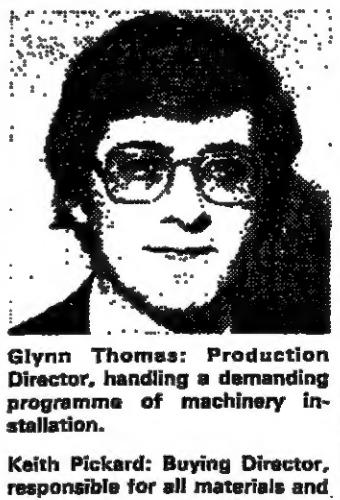
Linda Beard, who created the Dolly Mixtures collections for Coloroll.

Investment: The key to growth

Re-investment: High Growth: Low Gearing, is the formula for Coloroll's profit performance. Over the current 12 month period the company is installing four new Cobden Chadwick gravure machines together with embossing and shrink-wrapping equipment to increase capacity to meet the levels of sales growth. More than £1 million is being spent on this production machinery.

In addition, over £300,000 is to be spent on expanding warehouse facilities at two locations in Nelson, Lancashire and a further £100,000 is to be invested in a large I.B.M. 34 computer installed in the Coloroll sales office for the use of the telesales team, providing up to date information on stock and order situations.

Coloroll
are exhibiting
at Wallfashion '79,
Intercontinental Hotel,
London W1
this week.



Glynn Thomas: Production Director, handling a demanding programme of machinery installation.

Keith Pickard: Buying Director, responsible for all materials and capital investment purchases.

Peter Catlow: Finance Director, structuring finances to the challenge of a high growth, high investment phase.

Terry Robbins, Export Director

Don Smith, Director of the Packaging Division.

Export Sales:

An essential ingredient in a successful formula

In 1978/79, a major proportion of Coloroll production was devoted to export markets. Terry Robbins, Export Director, explains: "We sell into approximately 50 different markets, but the most valuable to us is the E.E.C. Exports were worth about £1½ million in 1974, doubled in value by 1977 and doubled again last year to over £2 million. A similar level of growth is planned for the current year."

Coloroll Ltd., Riverside Mills,
Nelson, Lancashire and at
54 Jermyn St., London SW1.

More than wallcoverings in the Coloroll product mix

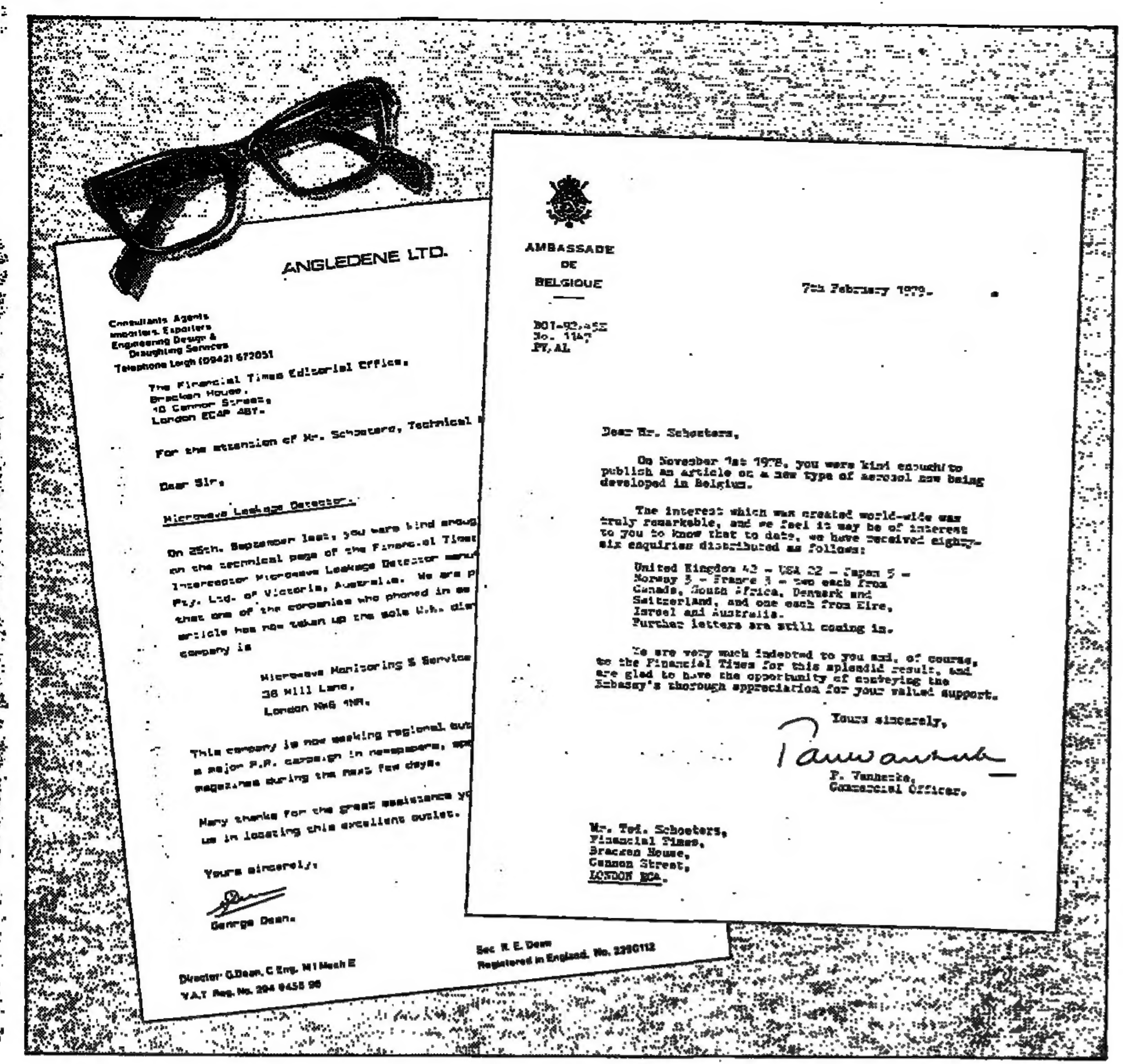
During the past 12 months, Coloroll has rationalised its product range drastically. The low profit, paper packaging and merchandise division has been dismantled to free the time, and release the energies, of management for the development of the wallcoverings business.

One area of packaging that has been retained and into which further investment is to be made is plastic packaging and 'Supabag', Coloroll's patent carrier sold to major retailers like Spar, Marks & Spencer, Boots and Sainsbury's. £250,000 is being spent on new machinery to double production capacity and sales volume in 1980.

Coloroll's Packaging Director, Don Smith, is responsible for the development of this division of the company which currently is forecasting sales of 150 million large bags a year.

COLOROLL

-in business for the '80s



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Telephone Leigh (0942) 672051

The Financial Times Editorial Office,
Bracken House,
10 Cannon Street,
London EC4P 4BY.

For the attention of Mr. Schoeters, Technical

Dear Sir,

Microwave Leakage Detector.

On 25th. September last, you were kind enoug
on the technical page of the Financial Times
Interceptor Microwave Leakage Detector manu
Pty. Ltd. of Victoria, Australia. We are p
that one of the companies who phoned in as
article has now taken up the sole U.K. dis
company is

Microwave Monitoring & Service
38 Hill Lane,
London NW6 4NR.

This company is now seeking regional out
a major P.R. campaign in newspapers, spe
magazines during the next few days.

Many thanks for the great assistance yo
us in locating this excellent outlet.

Yours sincerely,

George Dean.

Director: G.Dean, C.Eng. M.I.Mech.E
V.A.T. Reg. No. 294 9458 96

Sec. R. E. Dean
Registered in England, No. 2290112

AMBASSADE
DE
BELGIQUE

301-92.452
No. 1147
PV/AL

7th February 1979.

Dear Mr. Schoeters,

On November 1st 1978, you were kind enough to publish an article on a new type of aerosol now being developed in Belgium.

The interest which was created world-wide was truly remarkable, and we feel it may be of interest to you to know that to date, we have received eighty-six enquiries distributed as follows:

United Kingdom 43 – USA 22 – Japan 5 –
Norway 3 – France 3 – two each from
Canada, South Africa, Denmark and
Switzerland, and one each from Eire,
Israel and Australia.
Further letters are still coming in.

We are very much indebted to you and, of course, to the Financial Times for this splendid result, and are glad to have the opportunity of conveying the Embassy's thorough appreciation for your valued support.

Yours sincerely,

P. Vanhecke,
Commercial Officer.

Mr. Ted. Schoeters,
Financial Times,
Bracken House,
Cannon Street,
LONDON EC4.

So what's new?

Our daily page of news of discoveries and technical innovations keeps senior businessmen informed and up-to-date with changing technology. And it is news and information that is published often long before Trade and Technical publications.

The Financial Times Technical Page is read by senior executives to check on what competitors are doing, to keep an eye on development trends, it is read to find out about joint ventures, new opportunities or licensing agreements.

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Quality readership — spread through 120 countries around the world — gives you the ideal advertising platform to announce a revolutionary idea, a technological breakthrough or publicise your new product range.

For details of advertising on the Financial Times Technical Page and any further information, please contact **Clive Radford** and talk about something new.

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Fold up an
Senses the
Wide paper video imaging
Electronic mail study
Clockwork

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UK NEWS—LABOUR

Post Office engineers to press 25% claim

By Our Labour Staff

POST OFFICE engineers yesterday threatened to take industrial action from July 1 if their claim for pay increases of 25 per cent is not met.

Action by members of the Post Office Engineering Union could black out television programmes and delay telephone repairs and installations. The action would include an overtime ban and selective strikes.

Mr. Bryan Stanley, general secretary, told the union's annual conference at Blackpool: "We must make it clear that we are not going to be pushed on one side by the Post Office board, by the Government or by anybody else."

The union has rejected a pay offer of 9 per cent with further rises of 3½-7 per cent for grade restructuring. Two unions representing clerical and computer workers have also rejected the offer, and their selective strikes have halted the issue of all computer-processed telephone bills and held up payment of £350m.

Food workers

Mr. Terry O'Neill, national president of the Bakers, Food and Allied Workers' Union, opened the union's annual conference yesterday with a stinging attack on former Ministers and union leaders.

Mr. O'Neill, who is also acting general secretary following the sudden death in April of Mr. Sam Maddox, said in Margate that recent years had seen Labour ministers and union leaders "wining, dining and living to a very high standard" while expecting many workers to accept meekly small increases on already small incomes."

Mr. O'Neill attacked the decision by Lord Scanlon, formerly president of the Amalgamated Union of Engineering Workers, to take a life peerage.

Mr. Sid Weighell, general secretary of the National Union of Railwaymen, told NUR branch secretaries in Southport yesterday that in the Conservative Government the country faced an administration hostile to the nationalised industries. The "menace" of lower Government spending on support for the railway passenger business and on the industry's capital investment programme was "crystal clear."

Chemical industry pay offer heads for rejection

BY PHILIP BASSETT, LABOUR STAFF

CHEMICAL PROCESS workers are believed to have rejected a pay offer that would cut the working week in companies introducing new technology.

Union leaders regarded as a breakthrough an agreement by the Chemical Industries Association, which has 350 member companies, to allow individual companies to negotiate on a cut in hours.

The results of consultation with union members on the offer, which covers about 60,000 process workers, are expected at the end of this week.

Reports from the regions to union head offices, however, indicate that the agreement which would add about 14½ per cent to the industry's wage bill, has been rejected. The offer was circulated with no recommendation from union negotiators.

The move to cut the working week seems to have been welcomed. The Transport and General Workers' Union, one of three involved, says that six companies have offered to agree locally to reduce hours.

The disagreement is thought to arise from the amount of new money offered: a 12.5p an hour increase on basic rates and the transfer of 8p to those rates from locally negotiated pay increments.

Shift allowances would be increased by 42 per cent, call-out payments by 50 per cent and drivers' subsistence allowances by 25 per cent.

Details of a pay offer to 52,000 Imperial Chemical Industries' manual workers are being sent to union members for discussion after talks last week.

Union negotiators rejected an offer worth about 15 per cent last month. The improved offer is estimated to be worth about 16½ per cent. ICI says it is final.

The new offer contains improvements to differentials for the company's eight-grade structure, and is being sent without a recommendation. Results are expected by June 18.

● Pilkington shop stewards will meet national union officials at the glass company's St. Helens plant today after union negotiators last week rejected a pay offer of about 9 per cent on basic rates.

Tougher NALGO strike policy

BY OUR LABOUR STAFF

BRITAIN'S largest white-collar union, the National and Local Government Officers' Association, is likely to toughen its strike policy after last winter's prolonged industrial action by social workers.

Though the 730,000-strong union has already decided to make substantial cuts in the level of its official strike pay after losing about £2¼m in the social workers' dispute, a motion to be considered at its annual conference next week calls for a re-examination of strike policy to make action more effective.

The motion, signed by eight branches, will receive the support of the union's executive. It calls for a paper to be prepared on industrial disputes procedures and suggests that conditions on the payment of strike pay should be introduced to ensure that strikers participarte fully in any action, such as picketing.

It also calls for consideration of the introduction of a levy during a dispute to keep the union's strike fund "at a level high enough to allow disputes to continue until successfully concluded."

The union's strike fund stands at about £300,000 after the social workers' dispute, probably the costliest industrial action in the union's history.

Branch feeling against the conduct of the dispute—action and its effects differed widely from region to region—is shown in motions calling for national organisation of militant action and for joint pay claims for all union members from next year.

One branch has tabled similar motions to the water service, local government, gas, electricity, universities, health and new towns' group meetings at the conference, all instructing union negotiators to reject any pay offer which falls below 13 per cent.

The executive's motion on pay is opposed to overall pay policies, though it states that a new economic contract with the Government is essential, and it sets out an objective of securing settlements comparable with the general level. The union has backed a claim for a 15 per cent increase and a comparability study.

Barclays' staff agree seven-day working

BY OUR LABOUR STAFF

BARCLAYS BANK computer staff have agreed by ballot to seven-day working. Voting was roughly 2-1 in favour.

The agreement on the Bank's proposals provides for not more than 35 hours a week to be worked, and not less than 33½ hours. The shift allowance to computer staff will be 45 per cent of salary, subject to minimum and maximum annual payments of £1,131 and £2,868.

On the introduction of seven-day working, staff making the change who have at least one year's service will receive a special payment based on length of service, salary and age.

A computer worker aged 30, for example, with 10 years' service would under the formula receive a payment of 25 weeks' basic salary.

● The TUC-affiliated Engineers' and Managers' Association has reached agreement with the non-TUC Association of Management and Professional Staffs for mutual co-operation between the two unions.

To run the finances of a multi-market business like The Thomson Organisation, a man must be as multi-faceted as his company.

His banker must be the same.

W. Michael Brown, Finance Director, The Thomson Organisation.

David A. Moring, Vice-President, Chemical Bank.

As Finance Director of The Thomson Organisation, Michael Brown must manage the financial resources and help assure the profitability of a large and rapidly growing group with interests in publishing, travel and petroleum.

Thomson publishes The Times, The Sunday Times, regional newspapers, books, Family Circle in the UK, Living, numerous trade, technical and educational publications in some ten countries around the world, owns Thomson Travel and its subsidiary Britannia Airways. Through an association with the Occidental Consortium, it is involved in the development of oil fields in the North Sea.

So Michael Brown must have in-depth financial knowledge not only about Thomson's products, but about the countries in which Thomson operates. His Chemical Banker, David Moring, must have the same.

"David's understanding of our business is important," says Brown. "But so are the flexibility and fast response he and his Chemical Bankers come up with."

Working closely with Michael Brown, David Moring and his team have provided TTO's publishing interests with multi-purpose, multi-duration credit facilities in six local currencies exactly when required. In a half-hour meeting, they thrashed out an agreement in principle on a medium-term loan for North Sea oil development.

Through Chemco International Leasing, a Chemical Bank subsidiary, they helped Thomson's Britannia Airways lease a Boeing 737-200 in minimum time.

Says Brown, "Chemical Bankers get things done because they don't have to go back to the head office for approval on every decision." Obviously, Michael Brown works with other international banks. But David Moring's personal understanding of The Thomson Organisation and the bank's flexibility are two important reasons their relationship continues to grow. That's what usually happens when financial executives get together with Chemical Bankers.

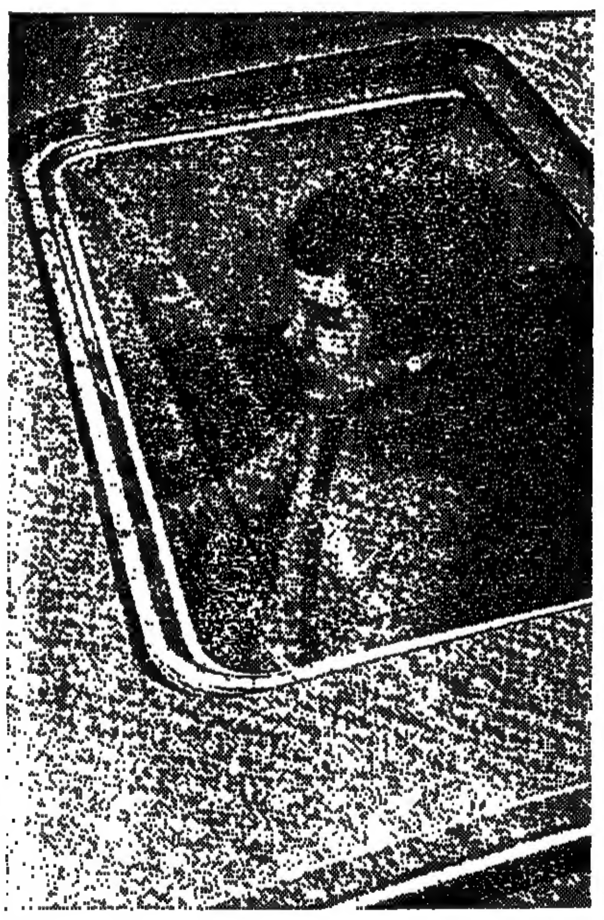
The difference in money is people. CHEMICALBANK

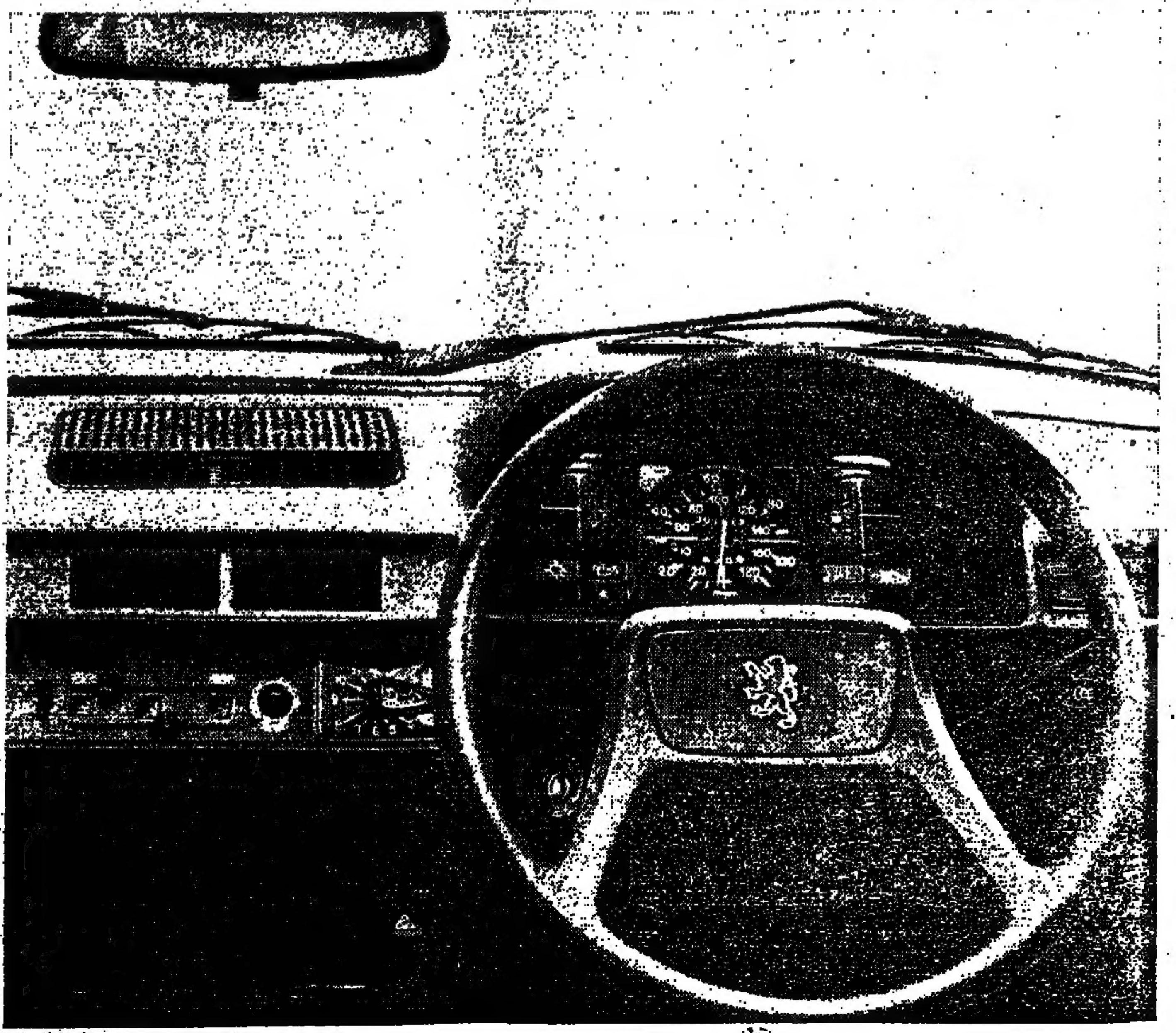
Chemical Bank House, 180 Strand, London WC2R 1ET Tel: 379 7474 Representative Offices: Scottish Provident House, 1-2 Waterloo Street, Birmingham · Charlotte House, 17 Charlotte Square, Edinburgh. Main office: New York, N.Y. Abidjan, Bahrain, Beirut, Birmingham, Bogota, Brussels, Buenos Aires, Cairo, Caracas, Channel Islands, Chicago, Dubai, Edinburgh, Frankfurt, Hong Kong, Houston (affiliate), Jakarta, London, Madrid, Manila, Mexico City, Milan, Monrovia, Nassau, Paris, Rio de Janeiro, Rome, San Francisco, Sao Paulo, Singapore, Sydney, Taipei, Tehran, Tokyo, Toronto, Vienna, Zurich.

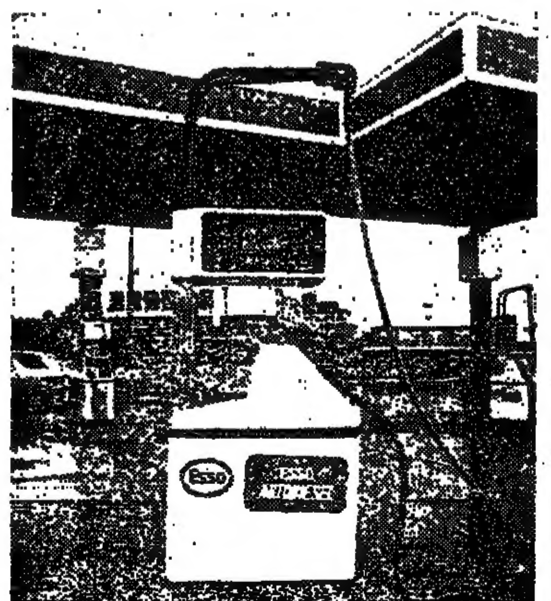
هكذا من الأصل

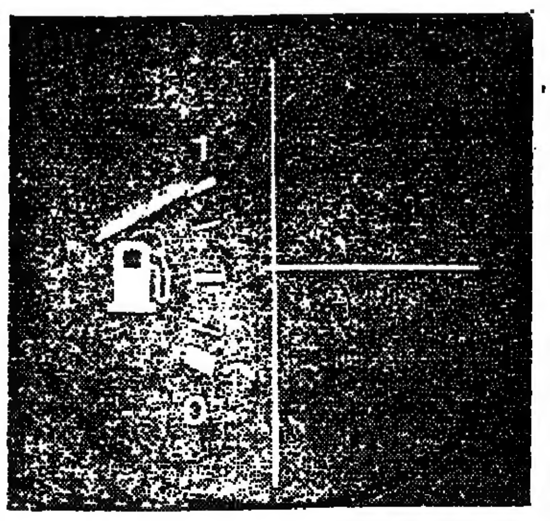
هكذا من الأصل

The new Peugeot 305 diesel. Up to 53mpg.*









Exceptional economy has now been added to the proven virtues of style, comfort and value for money of the Peugeot 305 range, with the launch of the new diesel 305 GRD.

While fuel economy is all important these days, the family car that can obtain over 50mpg is still very rare. The new Peugeot 305 GRD however, is such a car.

Style,

The GRD is powered by a unique 1548cc all-aluminium alloy diesel engine. This further adds to the already exceptional fuel economy by not only saving weight but also by ensuring optimum heat dispersal. Mounted transversely it drives the front wheels and produces quiet, smooth power with a top speed of 84 mph.

after mile,

If you average around 8,000 miles a year, we admit that there's little to choose between a petrol car or its diesel powered equivalent. Over and above this mileage however, the advantages of diesel take over and the more miles you drive a year the greater economic and social sense the 305 diesel makes.

The GRD not only benefits you economically but also the world environmentally. The use of diesel helps reduce the drain on our already limited energy resources but also ensures through its cleaner burning qualities, a reduction in the level of air polluting toxic emissions.

There's more to diesel though, than just good mpg. There's proven reliability and greater engine life expectancy. And you can expect excellent cold and damp starting characteristics due to the fact that a diesel engine doesn't need spark plugs, points or a coil.

after mile.

The GRD retains all the hallmarks that have given the 305 range such widespread appeal. Beautifully styled body lines, an exceptional ride due to the four-wheel independent suspension and an extra long wheel base which means that you sit in between the wheels and not over them. There's rack and pinion steering for precise and predictable cornering plus front and rear crumple zones as well as many other in-built safety features for maximum passenger protection.

The equipment is of the highest standard with carpets throughout, 3-speed heater fan, heated rear window, clock, reversing lights and rear fog lamps to name but a few. There's even an optional sliding steel sunroof.

The Peugeot 305 GRD offers you exceptionally economical motoring without sacrifice to comfort and style. Why not test drive the GRD at any of our 250 dealers nationwide and prove its qualities for yourself.

*Fuel consumption (in accordance with official Government test procedures)

At a constant 56 mph (90 km/h)	At a constant 75 mph (120 km/h)	Simulated urban driving
53.3 mpg (5.3L/100 km)	36.7 mpg (7.7L/100 km)	40.3 mpg (7.0L/100 km)

I am interested in the diesel powered Peugeot 305. Please send me information.

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Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

REFRIGERATION

More room for cargo

TONE PLATT Crawley, work- ng in conjunction with Con- argo the container builder and CL have successfully produced design of one-piece all elec- ric refrigeration unit that is nly 15 inches deep for front nd mounting into an ISO con- ainer.

The unit forms an integral art of the 20 x 8 x 8.5 feet ontainer with no projection eyond the external envelope. hus the minimum useable in- ernal length in such a con- ainer is about 18 feet, significantly increasing the amount of argo space available.

Designed to accommodate hilled or frozen cargoes, the plant is suitable for road, rail and maritime use. Evaporator air flow discharges downwards to floor level and across the full width of the container, with return air received at roof level. The plant is air cooled for general use and fresh water cooled when the container is shipborne and stowed below decks.

The robust fabricated steel construction uses strengthened double skin glass reinforced plastic, and exposed steel members are protected against corrosion. A smooth hygienic coating is used internally.

More from Stone Platt at P.O. Box 5, Crawley, West Sussex RH10 2RN (0293 27711).

INSTRUMENTS

Monitoring of waveforms

HERE it is necessary to build nto equipment a cathode ray ube display to monitor a wave- orm, a simple unit aimed at uch OEM markets is offered by 'copex Sales, Pixmore Avenue, etchworth, Hertfordshire SG6 JJ (04626 72771).

Known as the 4MI, this onitor is priced at £175 and an be used where a pre-con- itioned signal is available for isplay.

Matched vertical and hori- ontal systems both have a sen- itivity of 100 mV/cm, with 10 per cent adjustment provided by internal pre-set controls. The bandwidth is dc to 1 MHz (−3 dB) and the accuracy is 3 per cent of the pre-set sensitivity.

Front panel size of the instrument is 134 x 162 mm and the weight is 3.4 kg—it can be easily mounted in a half-width rack. All input sockets are at the rear and vertical/horizontal shift control can be carried out from the front panel or by means of internal pre-set controls.

METALWORKING

Swiss machine shapes by erosion

LATEST electric discharge cutting machine from Industrial Electronics in Switzerland, available from Matchless Machines, can make cuts in work-pieces up to 650 by 480 by 120 mm in size weighing up to 100 kg.

Known as the Agiecut DEM 250, the unit uses a moving vertical wire carrying a pulsed voltage to spark erode profiles which can be tapered with small radius corners. Combinations of parallel and tapered profiles involves separate cuts, but these are carried out successively under computer control without the need for manual repositioning the wire electrode or the workpiece.

A number of advantages are claimed for the process. For example, since it is contact free, cutting takes place without any force being exerted on the work-piece, the mechanical strength of which is unimportant. There is also no cost for tools, and the cut item is ready for use (no roughing is required and the cut produced is to high accuracy).

An additional benefit is the reduction in lead time when producing prototypes or small production batches of components—with the certainty that all the parts will be identical. The process is outstanding for use or hard materials used for tools or moulds and for the small-scale production of delicate parts.

More from the company at S. Barton Road, Water Eaton Industrial Estate, Bletchley, Milton Keynes MK2 3HZ (0908 74468).

PROCESSING

Versatile temperature control system

INTENDED mainly for temperature control in advanced process systems, the model 211 programmer/temperature controller just launched by Eurotherm is able to pre-set up to eight levels separated by seven time segments, showing the results both on a digital display and by means of a mimic diagram on the front panel.

By mechanical linkage of eight potentiometers each setting one of the eight levels to a stretched cord arrangement on a small vertical panel, a rough, but meaningful idea of the programme set up can be seen by the engineer.

During programe setting the parameter under adjustment appears on a four digit display. The set details are then secured by means of a key switch, as are those of further potentiometers that determine the time of the ramps. Setting of the basic units—minutes or hours—is performed by rear terminal linking.

When set to "run" the programmer starts the sequence and indicates the instantaneous segment number and either the output value at that moment or the time remaining in the program, whichever is selected.

The 211 can be specified with a built-in high stability three-term controller, or it can merely supply the set point for an external controller.

Overall control of the unit is by microprocessor backed by a non-volatile memory.

As a result the programmer is capable of reset at any time, program freezing at any point, fast run for checking purposes, and immediate freezing if someone should unlock the secure key. Optionally, these functions can be operated remotely.

A further option provides for ten logic signals from the unit to indicate data entry, ready, segment number and end of program. If desired these signals can be linked to internal relays that will operate external equipment.

More from the company at Worthing, Sussex (0903 31681).

Alarm sounds if beyond limit

PUT ON the market by Process Measurement Systems of 77 Gloucester Road, Littlehampton, Sussex BN17 7BS (09064 4450) is a small tronic unit which will scan nputs from eight four-wire platinum resistances and raise the alarm if any is outside prescribed limits.

The scanning rate is adjustable on the front panel to give dwell times ranging from one to 60 seconds per input, the measured temperature appearing in liquid crystal or light emitting diode display, to choice. The high and low trip sensors levels are also set from the front panel using controls normally concealed by a screw-fastening hinged flap.

The temperature range of the unit is −199.9 to +199.9 degrees Centigrade.

An "alarm accepted" button when pressed leaves the scanning sequence to run while the annunciator of the input in question remains faintly illuminated. When the scan returns to the point in alarm, an internal memory causes the "accept" and "alarm" legends to be brightly lit but inhibits the external alarm. The alarm circuitry is automatically restored when the cause is removed.

COMPUTING

Strengthens designers' hands

COMPARED WITH working in machine code or a high level language not suitable for use in micro-based systems, CONTEXT (for construction execution and test) will cut development costs by between 30 and 40 per cent and maintenance by even more.

These are the claims made for Context by Systems Designers, the 200-strong group specialising among other things in the development of the Coral Language, on which it is based. It also uses the Mascot real-time development system (from RSRE Malvern) on a modern mini to engineer systems in which one or more of the most powerful micros available today can be "embedded."

The mini-computer, which is a PDP11, but can be an equivalent machine if customers wish, is used to "exercise" the micro and its associated gear and prove that software instruction sets, or modules, written for it actually do the job they are intended to, prior to incorporation into bigger systems.

Should the coding be defective at any point, it is a relatively simple task to carry out the required corrections.

Such an application program, running in the micro under Context, is given access to the peripherals operating with the host mini.

During the work, records of development are kept so that if at any time in the future a user wishes to alter part of a program, the task is simple.

Areas already using or considering Context include aviation and a fare collection network of micros with links to a central machine is under design. Power generation equipment companies have shown interest and for process control groups Context would appear to be a must.

Initially it will cater for DEC LSI-11, Texas 9900, Motorola M6800 and the Intel 8086. Later additions could be the Ferranti L-100 and the Plessey Miproc.

Systems Designers, System House, 1, Pembroke Broadway, Camberley, Surrey GU15 3XH. 0276 62344.

Mechanical installation
is part of...
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total capability
01-235 9951

Big machine from ICL

AN ADDITION has been made by International Computers to the top end of its 2900 range in the form of the 2982, offering a 70 per cent increase in power over the 2972.

Available as both single and dual processor machine, the new computer will provide 2900 users with a means of growing beyond the 2972 and will be available in October 1979.

A typical configuration consisting of processor, store and store access ranges from £1.25m for a four megabyte system to £1.75m for a 16 megabyte one.

The company says it has doubled the size of the price performance ratio compared with the earlier 2900 systems and in the dual processor version the new machine is among the largest computers available.

With more memory available it becomes possible to support increasing numbers of terminals, giving much better remote job entry performance. Work throughput gains of up to 50 per cent can be expected.

The 2982 makes use of the company's common storage system which means that 2960, 2972 and 2976 users can upgrade to the new machine while retaining their investment in mainstore modules.

It also has a 16 kilobyte cache memory which supports processor accesses to mainstore, contributing to machine performance.

More from the company at ICL House, Putney, London SW15 1SW (01-788 7272).

MATERIALS

Better tape for masking

3M IS introducing a new general purpose masking tape, Scotch 2022 Premium Grade, which is said to offer substantial improvements in quality and performance.

Both backing and adhesive have been chosen to give a balanced construction which offers superior performance, improved roll stability and longer shelf life. The adhesive used provides better initial grip and greater holding power, making application quicker and easier. It is also more resistant to transfer when the tape is removed.

Other advantages include ease of contour following due to the crepe paper backing (of particular value in painting applications when irregular shapes and contours must be masked off), and minimum paint build-up and edge seepage, both common causes of ragged paint lines.

Supplied in 50 metre rolls, the tape is available in a range of widths from 6 mm.

For further information and a sample roll of tape, contact Neil Bray, Industrial Tapes Group, 3M United Kingdom, 3M House, P.O. Box 1, Bracknell, Berkshire RG12 1JU (0344) 58269.

Ceramic seals components

CERAMACAST 511, a magnesium-oxide/zircon formulation, is a high temperature ceramic material for use up to 1500 degrees C, and is now available from Aremco Products International Corporation, through The Meclec Company, 5-6, Towerfield Close, Shoeburyness, Essex SS3 9QP (03708 5047), the UK agents.

It is a water mix material which after mixing can be poured, dipped or sprayed around components to be potted or end sealed. The material will set in 2 hours, and after a bakeout at 93 degrees C is ready for use. High temperature curing up to 1,093 degrees C is recommended to develop maximum physical properties and moisture resistance. The material has good dielectric strength and resistivity.

Ceramacast 511 is recommended for end sealing thermocouples, resistance thermometers, potting material for electrical feed-throughs, encapsulating components such as resistors, and high temperature insulation for instruments.

Undercoat dries quickly

OFFERING ESPECIALLY good corrosion resistance and a drying time of just half an hour is a red oxide primer announced by ICI Paints Division, Slough SL25DS.

Product is recommended for use as an undercoat over prepared surfaces, or as an ideal work primer on new vehicle bodies in the motor industry. Because of its high durability, says the company, it can be left as a works primer for up to six months.

It can be used under Polyurethane 383 or any conventional, synthetic topcoat, but is not suitable for use under cellulose or acrylic lacquers.

Called Red Oxide QD Primer/Undercoat (P540-336) it is supplied in 5 litre cans and is available through Brown Brothers or any of the nearly-190 stockists of ICI commercial transport paints throughout the UK.

ENVIRONMENT

Reclaiming a waste tip

LIME FROM Tilling Construction Services' quarry at Swinden, near Grassington, North Yorkshire, will be used to neutralise a South Yorkshire toxic waste tip in order to create a recreation area.

The six acre site, at Ravenfield, near Rotherham, was used over a period 14 years for dumping acid tars and other wastes from motor oil processing. This had involved treating the oil with concentrated sulphuric acid and, due to over-tipping, highly acidic sludges started to bubble on the surface, thus making the site, which is close to housing, a potential health hazard.

South Yorkshire County Council has now completed a 30-week reclamation programme during which the highly reactive lime was mixed in ratios ranging from 1:4 to 1:8, according to the amount of contamination, with over 16,000 tonnes of acid tar waste brought up by bucket excavator. The end result was an alkaline, dry, sand-coloured material and reaction of the lime with the acid was so intense that, on occasions, flames were produced.

Over 2,500 tonnes of lime was ultimately used (delivered daily from the company's quarry where there are rotary lime-burning kilns) and, after being appropriately sealed, the site is now to be covered with topsoil and seeded.

Whole cost of the operation will be £200,000, including a £170,000 reclamation grant from the Department of the Environment.

More from Tilcon at Conyngham Hall, Knaresborough, North Yorkshire (Harrogate 862841).

ELECTRONICS

Aerials for microwaves

HORN antennas, designed primarily for commercial applications at X-band and K-band frequencies can now be supplied by Microwave Associates of Dunstable LU5 4SX (0582 601441).

Four X-band models are available giving a variety of beam shapes and one K-band horn with a 20-degree beam width in the E plane and 17 dB nominal gain. X-band beam shapes include 25 degree pencil beam with 17 dB gain, a 30 by 70 degree "pancake beam" and a very wide beam with 1 dB gain. All the X-band antennas are fitted with appropriate flanges to mate with waveguide.

The units can be supplied foam-filled, at the customer's option, to prevent the ingress of moisture, dust or insects and to prevent vibration problems in mobile installations.

They are intended for use in microwave vehicle control systems, intruder alarms, speed measuring Dopper radars, door openers, and various industrial control systems.

Helps system building

A COMPANY called Intelligent Artefacts is marketing a complete range of building-block microcomputer Eurocards that enable engineers rapidly and easily to build up a working control system, with the minimum of design, software, or debugging.

Each is based on single Eurocards with 64-way connectors. They include a fully buffered Z 80 processor with an RS232 channel, a 2½k electrically alterable card (6834); 2k to 8k static and C-MOS random access memory cards; an analogue-to-digital converter with 8-way multiplexer; discrete input-output cards and solid-state relay units. Some free software is offered.

More from Intelligent Artefacts, Cambridge Road, Orwell, Royston, Herts. SG8 5QD (022 020 680.)

Pictures in synchronism

DEVELOPED by Marconi Communications Systems is a television picture-field synchroniser which eliminates the need to lock the local studio synchronising pulse generator to the remote signal to bring local and remote pictures into "sync" so that they can be freely combined.

Designed for PAL 625 line standards, the device can produce highly convenient synchronisation of more than two sources by simply adding further units, not possible with the conventional "genlocking" technique. Furthermore, since storage electronics is needed for only one field (as opposed to a frame, or two fields) the device is relatively small and inexpensive.

Using the field synchroniser a remote signal is accepted as an input and digitally processed via the field store so that it emerges in synchronism with the local source; any number of remote signals can be made available at the mixer by increasing the number of synchronisers. Greater reliability, economy and operational freedom is claimed because the whole studio synchronising system can be greatly simplified.

Marconi House, Chelmsford CM1 1PL (0245 353221).

SERVICES

Achieving the best finish

CONVEYORISED FINISHING line, complete with radiant oven has been installed at the Maywick (Hanningfield) factory, a few miles south of Chelmsford, Essex, specifically for demonstration purposes to finishers who are interested in exploring the possibilities of gas-fired radiant heat for curing/stoving/drying.

Finishing line includes both conventional air spray and electrostatic powder equipment, and a water-washed spray booth is linked to the oven by a variable speed overhead conveyor.

Oven is said to incorporate every degree of flexibility, enabling a potential user to select the oven configuration best suited to his particular product and finishes.

The company welcomes people to make an appointment and bring with them samples of products and finishes for testing under production line conditions. Invitation is also extended to representatives of paint and associated equipment manufacturers.

Telephone: Chelmsford (0245) 400637.

All these manufacturers supply Rolls-Royce diesel engines in their generators.

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Equipwise Ltd
Forest City Electric Co Ltd
G & M Power Plant Ltd
Generator Construction Ltd
Gemm Offshore Services Ltd
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Hampson Automation Ltd
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Welding Industries Ltd
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Bobinindus	Belgium
Diesel Electric	Belgium
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Birnbaum & Co	W Germany
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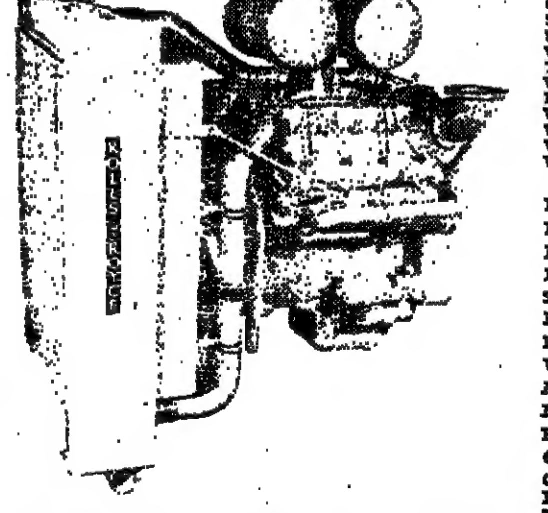

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Building and Civil Engineering

Improving the way to the oil wells

BOVIS INTERNATIONAL has been appointed technical consultant to the Gulf Oil Corporation, Egypt, for the up-grading of oil-well access roads in the Sinai desert.

Located near the East Bank of the Suez Canal and close to El Qantara, the existing roads extend over 15km and are of black-top construction laid on low-lying land reclaimed in recent years from the Mediterranean. They also bridge reception lagoons created during widening operations on the Suez Canal.

Now they require to be provided with an effective drainage system and generally up-graded to take lorry loads of up to 50 tons so as to facilitate exploratory drilling in the area by Gulf Oil.

The construction work, which is located in a restricted, high security area, littered with war debris, has been started by an Egyptian contractor.

Another task for Bovis International is the provision of co-ordination and administration for the completion of the European Investment Bank's new headquarters in Luxembourg.

Consultants already appointed for this project are: Denys Lasdun Redhouse and Softley, architects; Scott Wilson Kirkpatrick and Partners, consulting engineers; and Widnell and Trollope, quantity surveyors. The general contractor is Philipp Holzmann A.G. of Koblenz.

Two awards to French Kier

INCLUDED IN two contracts, together worth £2.4m, for French Kier Construction is a £1¼m project for the London Borough of Islington. This covers the erection of 69 dwellings and a community room at Athelstone Road, London N4. Work has begun and will take two years to complete.

Second contract, worth £1.2m, is for Alcan Lynemouth of Northumberland and includes the extension of the existing ash lagoon and the relocation of existing ash slurry pipeline, modifications to existing overflow weirs, and all associated drainage and fencing works.

Housing at Enfield

MODERNISATION of 120 houses for the London Borough of Enfield will be undertaken by Corrall Construction under a £1½m contract.

Dwellings are on the Galliard Estate, Edmonton, N9, and work involves modernising the bathrooms and kitchens, installation of central heating, full redecoration, repairs and some energy conservation work to all properties.

Work is to be carried out while tenants are in occupation over a contract period of 78 weeks.

More school work for Turriff

WALSALL Metropolitan Borough has awarded a contract to Turriff Construction for phase III of Sneyd comprehensive school which extends the value of the contract to £3m. The company was awarded the original phases last year.

Built on a site created by reclaimed Coal Board land, the school is designed to take 1,200 students between the ages of 11 and 18 years. Completion is due in the summer of next year.

The building has a concrete frame with grey/buff brick cladding and certain areas constructed as totally sealed air-conditioned envelopes, to counteract traffic noises from the nearby M6 motorway.

Concert and assembly hall

UNIVERSITY OF WARWICK has awarded a £1m contract to John Laing Construction for a single-storey 1,300-seat assembly and concert hall with a floor area of about 2,800 metres and a height of 15 metres.

Construction will be of reinforced concrete and structural steel frame on concrete foundations, with cladding of Forticrete blockwork and a stepped roof of precast units. Auditorium will be equipped with a hardwood sprung floor and have ancillary rooms around the perimeter.

Work for Fairclough tops £6m

MOST IMPORTANT contracts, in a total of over £6m, awarded to Fairclough Construction, are a £1.4m "slide-in" bridge for British Rail at Brentwood, Essex, and a £1.3m bus station with office block and shop units in Stockport for the Greater Manchester Passenger Transport Executive.

Other work for British Rail includes lowering two rail tracks on the main London to Bedford line at Kentish Town and electrification equipment, at about £320,000.

At Walton Summit Industrial Estate, near Bamber Bridge, the company is building four steel-framed factory units for the Central Lancashire Development Corporation in a bid to attract new industry to the area.

Under a £½m contract, for Shell Chemicals' Wythenshawe, Manchester, the company is constructing extensions to service buildings.

Among the rest of the jobs making up the full total are: substructure for Royal Mutual at Colchester, concrete water tower, near Norwich, new water pipeline at Ipswich, underground reservoir in East Anglia, aircraft test pads at Bentwaters and Woodbridge, Suffolk, building foundations at Newmarket, and a concrete reservoir near Colchester.

Bryant wins £2m contracts

OF THREE contracts awarded to C. Bryant and Sons, two are together worth £1.2m in a total value of £2m. First one is to erect 52 two-storey houses and flats together with site development works in The Butts, Walsall. The other is for extension to Brownhills Comprehensive School in Deacon Avenue, Brownhills.

Final job is for the erection of 12 warehouse units and associated offices for Minworth Industrial Park on its site off Forge Lane, Birmingham. This work is worth £820,000.

Support for Sweden is offered

DESIGNED TO extend the capability of Haki Scaffolding's system of access scaffolding is a new range of components to be used in conjunction with the company's standard access equipment.

Several different methods of support with only three basic components are now possible.

Two basic modes are a fork-head system (BVA) used with existing timber or metal beams, and a drophead system (BVB) designed for use with special Haki primary and secondary beams.

The first is used where the contractor is using his own support beams or, with aluminium primary beams supplied by the company.

The second method is claimed by the company to be the only support system available in the UK which incorporates its own interlocking aluminium primary and secondary support beams. These are strong and lightweight (35 per cent lighter than alternative) and slot easily together, conforming to the usual pattern of beams and joists in normal shoring. Wooden strips are set into the beams so that the deck forms can be fixed in position.

Manufactured in Sweden by Haki-Produkter Ab, the system scaffolding is available in Britain through Haki Scaffolding (UK), North Anston Trading Estate, Houghton Road, Anston, Sheffield (090 978 5956).

Insulation at the top keeps it warm below

WHAT IS described as a mechanical method of insulating lofts and roofs is now available from John Baker (Insulation), Henfield, Sussex (079 155 3561).

Company's managing director claims to be one of the pioneers of foam for insulating cavity walls in this country 20 years ago and the Superoof system is based on a new aminoplast foam specially developed for roof applications.

All ingredients of the material are thoroughly mixed together after which the foam is laid, by means of a gun, between joists, leaving a crisp, even and white surface throughout the entire roof area. Foam is guided into awkward corners created by pitched roofs (often inaccessible to a man laying conventional insulation material) and its slight odour is dispersed on drying. Normal depth of insulation will be around 100 mm.

In the case of residential property (whose occupants may be at home) the delivery lines are fed through the loft hatch to the roof space and the material is prepared outside the dwelling.

Apart from being rigid and self-supporting (the foam is said not to collapse with age or vibration) it will not lose its captive air value since it will not become impregnated with dust, says the company.

Because it tends not to shrivel and char when exposed to fire, it promises not to be a fire hazard.

Small sewage treatment plants designed

FLEXIBLE SYSTEMS for the design and construction of small sewage treatment plants, which can take into consideration all the criteria relevant to individual applications (including site levels, space limitation and final effluent disposal) have been developed by Tuke and Bell of Horsham, Sussex.

In an example provided by the company in relation to an installation at a hotel remote from main drainage facilities, the equipment involved conventional biological treatment capable of handling a foul drainage flow of an estimated 15,400 litres per day.

Water Authority standards were met with a system where two-stage settlement tanks led to an aerobic filter bed and from there into a complex of humus chambers, pumpwell and return sludge pump.

Feature of the basic general arrangement in this instance was the augmenting of the flow by re-circulation of part of the treated effluent.

Mothercat to build naval base

THE GOVERNMENT of Oman has appointed Mothercat to construct the Musandam naval base.

Value of the contract, scheduled for completion in 14 months, is about £3m.

The base is to be located on an island 3 km off the mainland. It is to be provided with a 100 metres-long piled jetty with a concrete deck and the contract also calls for barracks and offices. A small desalination plant will have to be installed.

It is understood that electrical work is likely to be sub-contracted.

Distributor in Saudi

GKN MILLS Building Services has appointed Abdalaziz Al-Binali Trading and Contracting as distributor for all GKN Mills products in Saudi Arabia.

The distributor's address is P.O. Box 64, Damman and this appointment brings the number of countries in which GKN Mills has either a trading partner, distributor or agent, to 38.

Mowlem wins £8m road contract

AN £8M contract to build the Beverley by-pass, north of Hull, has been awarded by the Humberside County Council to John Mowlem. The company has also been awarded a £3.4m contract for the first phase of a £16m sewerage project at Grimsby, South Humberside.

The 6.25 mile long Beverley by-pass will be mainly single carriageway except for a mile of dual carriage-way at an interchange with the A164 Beverley to Anlaby road. It will run from Killingwoldgraves, west of Beverley to Ings Bridge, near Cottingham. Near motorway standard with limited access it will have 11 bridges including one over the Hull-to-Scarborough railway.

The sewerage contract, which has been awarded by the Lincoln sewage division of the Anglican Water Authority involves construction of over 2½ miles of mainly 8.33 feet diameter tunnel constructed from pre-cast concrete segmental rings. These rings are to be lined with in-situ concrete to give a finished diameter of 7½ feet.

Gas terminal work worth £5m

TWO CONTRACTS worth a total of more than £5m have gone to William Press and Son for work at Shell Expro's St. Fergus gas terminal.

In excess of £3m, first contract is for the erection of part of the piping and mechanical equipment on-site: second part is worth over £2m and comprises off-sites piping and equipment erection.

Whole job calls for installation of 8-inch bore fine grain killed carbon steel, fully killed carbon and stainless steel piping, and associated mechanical equipment, including compressors, fired heaters, vessels, heat exchangers, valves and pumps.

Two Scottish jobs for Cubitts

CONTRACTS FOR factory extensions at Edinburgh and housing modernisation work at Bathgate together worth £1.7m have been awarded to Holland, Hannen & Cubitts (Scotland).

At the Scottish Development Agency's South Gyle Industrial Estate, Cubitts—member of the Tarmac Group—is to build a £1.2m four-storey extension to a block which the company is currently completing for Ferranti. Associated work includes a single storey store, a link corridor joining the new extension to existing buildings, and the provision of access roads and services.

Dick Peddie and McKay of Edinburgh have been appointed architects by the Scottish Development Agency, with the Agency's own design team as surveyors. Consultant engineer (services) are Ian Hunter and Partners of Edinburgh, with George Davie Crawford & Partners of Glasgow consultant engineers (structural).

The housing contract for West Lothian District Council involves the upgrading of 104 pre-war houses at West Calder. The tenants will remain in occupation throughout the operation and Cubitts, which has had considerable experience in refurbishing public sector housing, has to phase the improvements to cause minimum disturbance to the occupants.

Architect for the scheme is the West Lothian District Council's Director of Architectural Services, G. A. Stenhouse; quantity surveyor is C. B. S. Fulton.

Over £2.8m contracts won by Monk

WIDE VARIETY of work recently awarded to A. Monk and Co. totals about £2.8m. This company's patented system of suspended mobile work platforms will be in use at St. Pancras Station for the removal and replacement of roof sheeting to a train shed for British Rail, valued at over £700,000 while as part of the A19 Billingham diversion, the company will construct a £591,000 underbridge for BR at Billingham Bottoms, Cleveland.

British Gas Corporation has accepted a £107,888 contract for civil engineering work at Bishop Auckland and other jobs include bungalows for Bradford Council, workshop and offices for Welsh National Water Development Authority and advance factory units for the Welsh Development Agency.

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Opencast work

SGB GROUP'S CSG mechanical plant division, Lomount Construction, has been awarded an opencast coal mining contract by the National Coal Board for the recovery of about 121,000 tonnes of coal at Rowley, County Durham.

Contract is worth more than £1m and work is now under way. Upon completion, the area will be restored to farmland within two years, says the company.

IN BRIEF

- Taylor Woodrow will build a 2,300 sq metre factory extension at Hartlepool, Co. Durham, under a £379,000 contract awarded by Marbourn, part of Beree Group.
- Warwickshire Area Health Authority has placed an £80,000 order with S. Wernick and Sons of Brownhills, West Midlands, for the company's timber-framed building service for non-resident staff changing accommodation at Warwick Hospital.
- An aeromagnetic survey of an exploration concession in northern Thailand is to be carried out for Thai Shell Exploration and Production Co., by Hunting Geology and Geophysics.

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LOMBARD

A just way to cut spending

BY SAMUEL BRITTAN

CUTTING PUBLIC spending is a fashionable subject in the UK. But the discussion has been far too narrow in focus. There are ways of cutting public *spending* which would in no sense discriminate against the poor—if anything the other way round—but would enable very substantial reductions in income tax to be made and which are nevertheless rarely mentioned.

The clue to such cuts is the fact that while some Government grants and subsidies are labelled as such, others are given in the form of tax reliefs. But whether a particular form of aid is counted as expenditure or a deduction from tax liability is often little more than an accounting accident. For instance the new child benefit which replaced the old child tax allowance now counts as expenditure although its purpose is very much the same.

The last Public Expenditure White Paper published for the first time a list for 1978-79 of "direct tax allowances and reliefs"—often known for short as tax-expenditure. There are dangers in a comprehensive list of this kind.

Nevertheless, used with discrimination, the list of tax expenditure can be of great help in securing an even handed scrutiny of state subsidies. Many apparently large items do not really contain all that much on close examination. It might be neater and clearer to replace capital allowances and stock relief by a formula for calculating corporate tax liability which takes account of inflation directly, and also to have a lower rate of corporation tax: but much of the change would be one of form. Similarly the £1.5bn cost of capital gains tax relief for owner occupiers must to a large extent offset purely paper gains due to inflation.

The most clear-cut examples of allowances which are basically subsidies are the reliefs for pension and retirement annuity schemes, costing over £520m, for life assurance premiums costing £260m, and for interest on home loans, which cost over £1.1bn. If these were gradually all phased out, the revenue gain would approach £2bn and it would be possible eventually to lower the basic tax rate by nearly 5p, or raise both the married and single allowances by nearly £250 or to more than double the child benefit rates.

The mortgage, pension and insurance reliefs are simply a way of subsidising some channels of saving and one type of durable asset at the expense of others. They may pander to the prejudices of middle class voters—who largely pay for their own reliefs—but are no easier to justify than Sir Harold Wilson's celebrated preference for manufactured goods (other than candy floss) as against services.

The abolition of these special privileges would be an important step to the goal of a tax system with fewer loopholes and lower rates, favoured by almost every tax expert irrespective of politics. Moreover if they were carried out, they would open the door to other cuts in public spending.

Cash subsidies to hold down council rents amounted last year to over £1.4bn. The Conservative Budget on June 12 will cause an uproar if it takes as much as a nibble at this—an uproar that will to some extent be justified if council tenants alone are singled out for treatment.

But in a balanced package which cuts subsidies for both council tenants and private owners, it would be possible to take far more than a nibble. Indeed such an evenhanded approach was examined in the Labour Government's Housing Review, but dismissed by Peter Shore on conventional politician's grounds.

There is another aspect to the special reliefs. The combination of massive tax subsidies for pensions and insurance combined with high taxes on ordinary investment income, means that no investor in his right mind will put money into a small firm while he can still increase his pension.

If we wanted deliberately to concentrate new investment in the hands of pension fund managers we could hardly have done better. A cut in the higher tax rate, which is all that we are likely to get next week, will go only a part of the way to removing the distortions.

The moral I am trying to draw is that the wrong way to criticise the Conservative package will be just to scream in favour of every threatened subsidy and grant.

It would be possible to cut many kinds of spending and subsidy on items which are not actually public goods, while at the same time redistributing post-tax income towards the less well-off and also shifting power away from the big battalions. But has anyone in politics had the imagination to see this?

Taxing problems on the motorway

THE WEEK IN THE COURTS

BY JUSTINIAN

LONG-DISTANCE motorists who want to learn how the petrol and catering services on British motorways are financed will find much of their curiosity satisfied by reading the latest output from the House of Lords in a case, *Tucker (Inspector of Taxes) v. Granada Motorway Services Ltd.* The less mobile armchair tax consultant will find some guidelines in trapping the elusive quality of the nature of payments for the purpose of computing tax.

The question in the case was whether a lump sum of £122,220 paid by the taxpayer to his landlord in order to secure a reduction in rent under a lease was deductible in computing the profits for corporation tax purposes.

The disbursement was conceded to be wholly and exclusively expended for the purposes of the trade; but was it nevertheless a sum employed as *capital* in the trade? The hoary issue was whether the expenditure was of a capital nature (and hence not deductible from tax) or a revenue payment (and therefore deductible).

Granada operates three sites supplying goods and services to the public at motorway service areas. All three sites are held on leases granted in 1965 for 50 years by the Minister of Transport, now within the Department of the Environment.

The rent for the leases comprised two elements, a fixed annual amount of £15,000 and an "additional rent" which is a variable amount calculated as a percentage of the gross takings of the business transacted on the site. The variable amount was in the nature of a profit-sharing arrangement.

The gross takings are derived from the sale of petrol and from the provision of catering services, including the sale of stationery, newspapers, magazines, sweets and tobacco. Gross takings are defined in the leases as being exclusive of petrol duty but there was *no* corresponding provision that they were to be exclusive of tobacco duty.

The result was that the additional rent was calculated to a substantial extent by reference to tobacco duty. The additional rent started at 1 per cent of gross takings up to £300,000, and the rates rose by stages as the gross takings increased until it reached 15 per cent on gross takings over £700,000.

The effect of increases in the duty on tobacco was to make it more and more difficult for the service area operators to trade at a profit. Consequently they approached the Government to have the terms of the leases amended.

The Government had already acknowledged in 1967 that such leases bore harshly on the operators and in subsequent leases to other operators of service areas the gross takings had been defined so as to exclude tobacco duty as well as petrol duty.

Instinctively sympathetic to Granada's claim for a revision of its leases, the Department of the Environment agreed that the liability for additional rent on tobacco duty would be commuted by payment of a lump sum based on six times the amount of additional rent on tobacco duty for the year ending July 1973. The amount of £122,220 was the lump sum to be paid and calculated in this way. How was this money to be regarded?

The payment was clearly designed to enable the operators to earn bigger profits. From this point of view it might be thought that the payment should have a revenue character. On the other hand, the payment produced a modification in the lease which could be regarded as an indentifiable asset, making the lease less disadvantageous. From this point of view it might be thought that the payment should be regarded as a capital payment.

The latest judicial essay into determining what is revenue and what is capital has had a salutary effect. The courts have proclaimed that there is no single rule or touchstone that can be devised for distinguishing capital from revenue payments.

As one of the nine judges who heard the case observed, the decisions of the counts in the past have provided an intellectual minefield in which principles are elusive and analogies are treacherous.

Precedents, moreover, have proved to be vague signposts and the direction-finder is said to be the judicial common sense, to which the judge added the depressing postscript that "the practice of judicial common sense is difficult in revenue cases."

The case is also valuable for the burial of one other revenue shibboleth. The Special Commissioners (whose decision in favour of the taxpayer was reversed by each of the three courts—Chancery Judge, Court of Appeal and House of Lords (with one dissent)—had decided that the £122,220 was to be regarded as an expense incurred on revenue account.

They had concluded that the purpose of the payment had been to commute the obligation to pay additional rent computed by reference to the tobacco duty element in the gross turnover; that it was not a sum paid for the purpose of getting rid of a burdensome capital asset; and that the payment resulted in the more economical and profitable running of their trade, but it was not made with a view to bringing into existence some asset or advantage for the enduring benefit of the trade. Thus the Special Commissioners had relied excessively — if not exclusively — upon the "purpose" test.

The questions that ought to have been asked were, did the payment bring some assets or advantage into existence, and was it an enduring asset and advantage, enduring in the same way that fixed capital endures?

The more relevant test than the "purpose" test was to see what the payment was in fact made for. It was made for commuting part of liability for additional rent payable under the lease. That stamped the £122,220, if not indelibly, with the character of a capital payment simply because a lease is a capital asset.

It was true that the value of the lease did not appear in Granada's balance sheet, nor, being non-assignable, had the lease any market value. Never-the-less it was a valuable asset without which Granada could have no motorway service area providing petrol and catering services.

Since the lease was for 50 years, and still had 40 years to run when the £122,220 was paid, it was quasi-permanent in character. In short, the effect of the lump sum payment was to modify the condition of the lease by reducing the rent in future and so to make the lease less burdensome or more advantageous to the operators.

The alternative way of looking at the problem was to regard the £122,220 as payment of a part of the rent in advance which could constitute only revenue expenditure. That, however, would be to take too limited a view of the nature of the payment. But it does show how a different arrangement for reducing the burden of the rent might have tipped the scales in favour of the taxpayer. After all, each case (as their lordships have firmly reminded us) has to be decided on its peculiar facts.

Tap on Wood looks likely

RACING

BY DOMINIC WIGAN

IN THE belief that Steve Cauthen will again put his faith in Tap on Wood, I expect Willie Shoemaker to come in for the ride on Cracaval, leaving Ernie Johnson the mount on the third Barry Hills runner, Two of Diamonds.

If those riding arrangements come to fruition there is little doubt that Tap on Wood, the 2000 Guineas winner, a top priced 15—1 chance with Heathorns on Saturday but a 12—1 prospect elsewhere, will be in strong demand.

Although Yves Saint-Martin has ridden so many fine races at Epsom and will be teaming up with Vincent O'Brien, Ireland's greatest post-war trainer, there is little prospect of real support for Cashel's Accomplice. O'Brien, who has often commented in the past that he would ideally like Lester to partner all his big race representatives but never ride for him in a serious piece of home-work, commented last week that Accomplice's gallop on Thursday with Piggott on board had told him little.

It would certainly be ironical were Accomplice to land this, of all Derbys, for Ireland with the Frenchman steering home a cast-off of the Classic's most successful rider.

Of the 25 still engaged in the Derby, four—Le Marmot, Leodegrance, Morvetta and Saracen Prince—are without jockeys. I suspect that Francois Boutin may pull out Le Marmot: while Paul Kelleway will only saddle Saracen Prince if he is fully satisfied that the ground is good.

Although many people still hope that we will see the most appropriate Derby winner of all time in the shape of Milford, a colt owned by the Queen, ridden by Piggott and sired by a National Stud stallion with, incidentally, a nomination presented to the Queen by Mr. Paul Mellon, it is worth repeating that Troy carries the principal hopes of West Ilsley.

But for the excitement building up over Epsom there is no doubt that there would be much more coverage over the outbreak of rhinopneumonitis — virus abortion — in the Newmarket area. The virus, which causes much suffering to mares, appears to be spreading and the death toll has risen to five, with two new studs affercete TAO two new studs affected.

In a joint statement issued by the Thoroughbred Breeders' Association and the Equine Research Station on Friday it was strongly suggested that mares and foals in the Newmarket area should not be moved until further notice.

The statement read: "Due to the highly infectious nature of the strain of rhinopneumonitis which has affected mares on the Wood Ditton Stud (three of which have died and two been destroyed) it has now spread to two private studs in the area as a result of contact. We must urgently emphasise that mares and foals within the Newmarket area should not be moved away from studs until further notice."

FOLKESTONE

1.55—Cantilever**
2.25—Fulham Road
2.55—Hottie Birbeck
3.25—Moron
3.55—Summer Madness***
4.55—Sweet Angelina*

TV/Radio

BBC 1

† Indicates programme in black and white

6.40-7.55 am Open University (Ultra high frequency only). 9.38 For Schools, Colleges. 10.45 You and Me. 11.00 For Schools, Colleges. 1.15 pm News. 1.30 Over the Moon. 2.01 For Schools, Colleges. 3.15 Whit Sunday Songs of Praise. 3.53 Regional News for England (except London). 3.55 Play School. 4.20 Deputy Dawg. 4.25 Cheggers Plays Pop. 4.45 Baggy Pants and the Nitwits. 5.05 Blue Peter. 5.35 Paddington.

5.40 News.
5.55 Nationwide (London and South-East only).
6.20 Nationwide.
6.35 Ask the Family.
7.20 The Dukes of Hazzard.
8.10 Panorama: A Democratic Europe?
9.00 Party Election Broadcast for the European Assembly by the Labour Party.
9.10 News.
9.35 Boxing: John Conteh v. Ivy Brown.
10.25 Tonight.
11.05 What's Your Poison?
11.30 Weather/Regional News.

All Regions as BBC-1 except at the following times:—

Scotland 5.55-6.20 pm Reporting Scotland. 11.30 News and Weather for Scotland.

Wales—1.30-1.45 pm Pila Pala. 5.55-6.20 Wales Today. 6.55-7.20 Heddiw. 9.00-9.10 Election Broadcast for the European Assembly by the Labour Party in Wales. 10.25-11.05 Kane on Europe. 11.30 News and Weather for Wales.

Northern Ireland—3.53-3.55 pm Northern Ireland News. 5.55-6.20 Scene Around Six. 11.30 News and Weather for Northern Ireland.

England—5.55-6.20 pm Look East (Norwich); Look North (Leeds, Manchester, Newcastle); Midlands Today (Birmingham); Points West (Bristol); South Today (Southampton); Spotlight South-West (Plymouth).

BBC 2

6.40-7.55 am Open University.
11.00 Play School (As BBC-1 3.55 pm).
4.50 pm Open University.
6.55 A Child's Place.
7.20 Mid-evening News including sub titles.
7.30 "Luisa Miller," Verdi's opera live from the Royal Opera House, Covent Garden. Act 1.
8.35 Ten Years of Yesterday's Witness.
9.05 "Luisa Miller," Act 2.
9.50 Return Call to Brass Tacks.
10.00 News.
10.10 "Luisa Miller," Act 3.
10.45 Verse, Worse and Baby Grand.
11.15 Party Election Broadcast for the European Assembly, by the Labour Party.
11.25 Heute Direkt.
11.50 Closedown: "The Afternoon Sun" (reading).

LONDON

9.30 am Schools Programmes. 12.00 Chorlton and the Wheelies. 12.10 pm Rainbow. 12.30 The Cedar Tree. 1.00 News plus FT index. 1.20 Thames News. 1.30 Treasures In Store. 2.00 Monday Matinee: "The New Love Boat." 3.20 This Year, Next Year. 4.20 Clapperboard. 4.45 The Boy Merlin. 5.15 Batman.

5.45 News.
6.00 Thames at 6.
6.35 Crossroads.
7.00 Lingalongamax.
7.30 Coronation Street.
8.00 In Loving Memory.
8.30 World In Action.
9.00 European Election Broadcast by the Labour Party.
9.10 Turtle's Progress.
10.10 News.
10.40 Monday Thriller: "Deadfall."
12.50 am Close: Personal choice with Martin Jarvis.

All IBA Regions as London except at the following times:—

ANGLIA

1.20 pm ATV Newsdesk. 2.00 Movie Matinee: "The Family Nobody Wanted" starring Shirley Jones. 5.15 Survival. 6.00 ATV Today. 10.40 Left Right and Centre. 11.25 Doctors' Private Lives. 12.25 am Something Different.

1.25 pm Anglia News. 2.00 Houseparty. 2.25 Monday Film Matinee "The Guru" starring Rita Tushingham and Michael York. 5.15 University Challenge. 6.00 About Anglia. 10.40 Campaign Europe—Northamptonshire. 11.10 TV Movie "The Keegans". 12.25 am Living and Growing.

ATV

BORDER

1.20 pm Border News. 2.00 Houseparty. †2.25 Matinee "2,000 Women." 5.15 University Challenge. 6.00 Lookaround Monday. 6.20 The Sound of . . . Joe Henderson. 10.40 Late Film: "10 Rillington Place." 12.25 am Border News Summary.

CHANNEL

1.20 pm Channel Lunchtime News and What's On Where. 2.00 Inside Business. †2.25 The Monday Matinee: "Only Two Can Play." 5.15 University Challenge. 6.00 Channel News. 6.10 Untamed World. 9.00 A Chance to Meet (John Edrich). 10.38 Channel Late News. 10.45 Feature Film: "Seven Guns for the MacGregors." 12.30 am News and Weather in French followed by Channel Gazette.

GRAMPIAN

9.20 am First Thing. 1.20 pm Grampian News Headlines. 2.00 Monday Matinee: "Murder at Mercy" starring Bradford Dillman. 5.15 University Challenge. 6.05 The Faceof the Earth. 10.20 The Monday Film: "10 Rillington Place" starring Richard Attenborough. 12.35 am Reflections. 12.40 Grampian Late Night Headlines.

GRANADA

1.20 pm Cartoon. 2.00 Monday Matinee: Peter Sellers and Britt Ekland in "The Bobo." 3.50 The Whit Friday Quickstep Contests. 5.10 The Undersea Adventures of Captain Nemo. 5.15 Crossroads. 6.00 Granada Reports. 6.30 The Jetsons. 10.40 Reports Politics. 11.10 Appointment With Fear—Virginia Mayo in "Castle of Evil."

HTV

1.20 pm Report West Headlines. 1.25 Report Wales Headlines. 2.00 Survival. 2.30 The Family. 5.15 The Undersea Adventures of Captain Nemo. 5.20 Crossroads. 6.00 Report West. 6.22 Report Wales. 10.45 The Monday Film: Mallory.

HTV Cymru/Wales—As HTV General Service except: 1.20-1.25 pm Penawdau Newyddion y Dydd. 2.00-2.30 Hamdden. 6.00-6.22 Y Dydd. 8.30-9.00 Yr Wythn os ar Ekrop.

HTV West—As HTV General Service except: 1.20-1.30 pm Report West Headlines. 6.22-7.00 Report West.

SCOTTISH

1.25 pm News and Road and Weather. 2.00 Monday Matinee—"The World of Susie Wong," starring William Holden. 5.15 Popeye. 5.20 Crossroads. 6.00 Wears Way. 6.30 Talking Scots. 10.45 Late Call. 10.50 Derby Stakes. 11.50 George Hamilton IV.

SOUTHERN

1.20 pm Southern News. 2.00 Houseparty. 2.25 Monday Matinee: "Judith," starring Sophia Loren. 5.15 Betty Boop. 5.20 Crossroads. 6.00 Day by Day, including Southsport. 10.40 Southern News Extra. 10.45 Invasion Road. 11.15 Take the Mick. 11.45 Farm Progress.

TYNE TEES

9.25 am The Good Word followed by North East News Headlines. 1.20 pm North East News and Lookaround. †2.00 Monday Matinee "The End of the Affair," starring Deborah Kerr, Van Johnson and John Mills. 5.15 University Challenge. 6.00 Northern Life. 10.40 Cash and Co. 11.40 Derby Day. 12.35 Epilogue.

ULSTER

1.20 pm Lunchtime. 2.00 George Hamilton IV. 2.25 The Shape of Things to Come. 2.50 Friends of Man. 4.13 Ulster News Headlines. 5.10 Cartoon Time. 5.15 Crossroads. 6.00 Ulster Television News. 6.15 Family Matters. 6.30 The Mary Tyler Moore Show. 9.10 Three for Europe. 10.40 Three for Europe (Part 2). 11.15 Laverne and Shirley. 11.45 Bedtime.

WESTWARD

12.27 pm Gus Honeybun's Birthdays. 1.20 Westward News Headlines. 2.00 Inside Business. †2.25 The Monday Matinee: "Only Two Can Play," starring Peter Sellers and Mai Zetterling. 5.15 University Challenge. 6.00 Westward Diary and Sports Desk. 10.42 Westward Late News. 10.46 Feature Film: "Seven Guns for the MacGregors". 12.30 am Faith for Life. 12.35 West Country Weather, Shipping Forecast.

YORKSHIRE

1.20 pm Calendar News. 2.00 Monday Matinee: "The World of Suzie Wong," starring William Holden and Nancy Kwan, with Sylvia Syms and Michael Wilding. 5.15 University Challenge. 6.00 Calendar (Emley Moor and Belmont editions). 10.40 Calendar's Euro-Election Special. 11.25 Kaleshnikoff (A Fireside Theatre show).

RADIO 1

(S) Stereophonic broadcast
‡ Medium wave.

5.00 am As Radio 2. 6.00 Dave Lee Travis. 9.00 Simon Bates. 11.31 Paul Burnett. 2.00 pm Tony Blackburn. 4.31 Kid Jensen. 7.00 Stayin' Alive. 8.00 Andy Peebles. 9.50 Newsbeat. 10.00 John Peel (S). 12.00-5.00 As Radio 2.

RADIO 2

5.00 am News Summary. 5.02 Tony Brandon (S). 7.32 Terry Wogan (S) including 8.27 Racing Bulletin and 8.45 Pause for Thought. 10.03 Derek Hobson (S). 12.15 pm Waggoners' Walk. 12.30 Pete Murray's Open House (S). 2.30 David Hamilton (S). 4.30 Waggoners' Walk. 4.45 Sports Desk. 4.50 John Dunn (S). 6.45 Sports Desk. 7.02 Music from the Movies (S). 7.30 Sports Desk. 7.33 Alan Dell including 7.33 The Dance Band Days and 8.02 The Big Band Sound (S). 9.02 Humphrey Lyttelton with The Best of Jazz on records (S). 9.55 Sports Desk. 10.02 Pros and Cons. 10.30 Star Sound. 11.02 Brian Matthew with Round Midnight including 12.00 News. 2.02-5.00 am You and the Night and the Music with Len Jackson (S).

RADIO 3

‡6.55 am Weather. 7.00 News. 7.05 Overture, part 1 (S). 8.00 News. 8.05 Overture, part 2 (S). 9.00 News. 9.05 This Week's Composer: Ockeghem (S). 9.45 Talking About Music (S). 10.15 Bach Violin Sonatas (S). 10.50 Cecile Ousset piano recital (S). 11.45 BBC Scottish Symphony Orchestra (S). 1.00 pm News. 1.05 BBC Lunchtime Concert (S). 2.00 Music for Organ (S). 2.35 Matinee Musicale (S). 3.35 New Records (S). 4.55 Bandstand (S). 5.25 Homeward Bound (S). ‡5.45 News. ‡5.50 Homeward Bound. ‡6.15 At Home. 7.10 A Colin Davis Concert in Boston part 1: Mozart (S). 7.45 The Fantasy of Marxism (talk by Dr. Milorad Drachkovitch). 8.05 Concert part 2: Beethoven (S). 9.00 Italia Prize 1978: "A Coeur Ouvert" by Janos Komives (S). 9.30 Beethoven and Brahms recital (S). 10.25 Jazz in Britain (S). 10.55 A Portrait of Richard Tauber. 11.55-12.00 News.

VHF Only—6.00-7.00 am and 5.45-7.10 pm Open University.

RADIO 4

6.00 News Briefing. 6.10 Farming Week. 6.25 Shipping Forecast. 6.30 Today including 6.45 Prayer for the Day. 7.00, 8.00 Today's News. 7.30, 8.30 News headlines. 7.45 Thought for the Day. 8.45 A Moveable Feast. 9.00 News. 9.05 European Election Call. 10.00 News. 10.05 Wildlife. 10.30 Daily Service. 10.45 Morning Story. 11.00 The Derby celebrates the bicentenary of the world's most famous horse race. 11.45 Listen with Mother. 12.00 News. 12.02 pm You and Yours. 12.27 Brain of Britain 1979 (S). 12.55 Weather: programme news. 1.00 The World at One. 1.35 Party Election Broadcast by the Labour Party. 1.40 The Archers. 1.55 Shipping Forecast. 2.00 News. 2.02 Woman's Hour. 3.00 News. 3.05 Afternoon Theatre (S). 4.35 Story Time. 5.00 PM News Magazine. 5.50 Shipping Forecast. 5.55 Weather; programme news. 6.00 News. 6.30 What Ho! Jeeves. 7.00 News. 7.05 The Archers. 7.20 From Our Own Correspondent. 7.45 The Monday Play (S). 9.00 Reflections by Dic Jones, farmer and poet. 9.30 Kaleidoscope. 9.59 Weather. 10.00 The World Tonight. 10.35 Conversation Piece with Pat Cooke, artist. 11.00 A Book at Bedtime. 11.15 The Financial World Tonight. 11.20 European Election Platform. 12.00 News.

BBC Radio London

5.00 am As Radio 2. 6.30 Rush Hour. 9.00 London Live. 12.03 pm Call In. 2.03 206 Showcase. 4.03 Home Run. 6.10 Look, Stop, Listen. 7.30 Black Londoners. 8.30 Breakthrough. 10.03 Late Night London. From 12.00 As Radio 2.

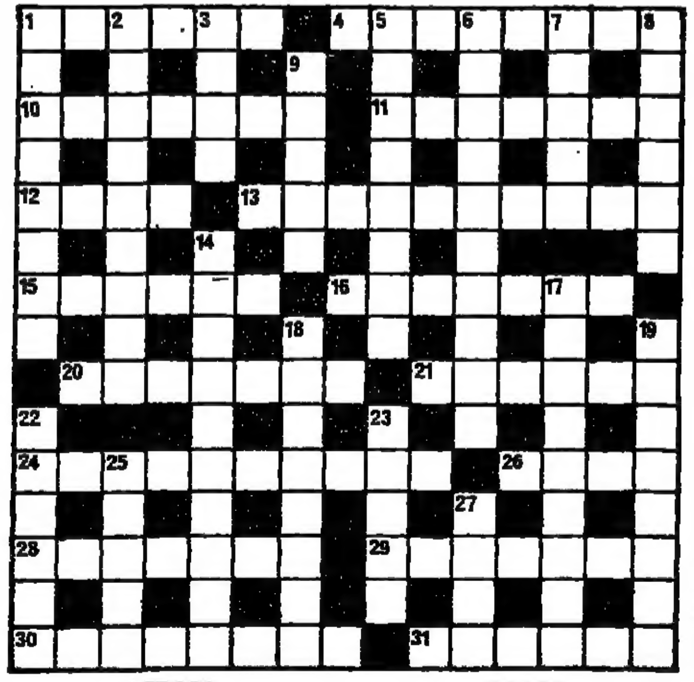
London Broadcasting

5.00 am Morning Music. 6.00 The A.M. Show. 10.00 Brian Hayes. 1.00-8.00 pm LBC Reports with George Gale, at 3.00. 8.00 After Eight. 9.00 Nightline. 1.00 pm Night Extra.

Capital Radio

6.00 am Mike Smith's Breakfast Show (S). 9.00 Michael Aspel (S). 12.00 Dave Cash (S). 3.00 pm Roger Scott (S). 7.00 London Today (S). 7.30 Europe '79 (S). 9.00 Nicky Horne's Your Mother Wouldn't Like It. 11.00 Tony Myatt's Late Show (S). 2.00 am Peter Young's Night Flight (S).

F.T. CROSSWORD PUZZLE No. 3,986



ACROSS

1 The acquiescent—from the Land of Nod? (3-3)
4 He leaves the charter perhaps for a Roman ruler (8)
10 An object of contempt in Belgium (7)
11 Turn to my MPs for an indication (7)
12 One mistake that can catch you out (4)
13 Cheap sweets mean the dawn of intelligence (5, 5)
15 Storm about a horse—what a lot of geese! (6)
16 Capers of a surgeon who's swallowed an oil mixture (7)
20 Designs for those that are camping (7)
21 He was asked to lend the grey mare (6)
24 Humbles like the eider-duck (6, 4)
26 Trousers for a graduate on the general staff (4)
28 Support us in disgrace (7)
29 Such matters are found coming up on the agenda (7)
30 Any course expressing admiration for a girl (4, 4)
31 Difficult feats for good men round a cask (6)

DOWN

1 A period on cereal in the distant past (5, 3)
2 Holding an inquiry or outstaying one's welcome (7, 2)
3 The outlays are the unknowns (4)
5 The girl has no right inside this part of Denmark (8)
6 Engineer with mannequin went first in new style (10)
7 Share loses a quarter in proportion (5)
8 Scotsman finds the motorway in a mess (6)
9 On which Berliners go for a good time (5)
14 Where the roast beef comes from (3, 7)
17 Flower people after a vehicle (9)
18 Boss sent round for undergraduates (8)
19 Herb, in confusion gets communications (8)
22 Reviles employment among sailors (6)
23 Was seated round you and I in a state of perspiration (5)
25 Concisely minus upset (2, 3)
27 Council to pass on to the West End (4)

The solution of last Saturday's prize puzzle will be published with names of winners next Saturday.

ENTERTAINMENT GUIDE

OPERA & BALLET

COLISEUM. Credit cards 240 5258. Reservations 836 3161. Opens Tomor. NUREYEV FESTIVAL. Evgs. 7.30. Mats. Sat. & June 7 & 14 at 2.30. With LONDON FESTIVAL BALLET June 5-9 Romeo & Juliet. June 12-16 Sleeping Beauty. June 25-30 with MURRAY LOUIS DANCE COMPANY of AMERICA.

COLISEUM. Credit Cards. 01-240 5258. Reservations 01-836 3161. ENGLISH NATIONAL OPERA. Tonight at 7.30: The Italian Girl in Algiers. End of Season. 104 balcony seats avail from 10.00 today.

COVENT GARDEN. CC. 240 1066. (Gardencharge Credit Cards 836 6903). THE ROYAL OPERA. Ton't 7.00, Thur 7.30 Luisa Miller. Tomor & Fri 7.30 Werther with Teresa Berganza & Alfredo Kraus. Wed & Sat 7.30 La Boheme. 65 Amphi seats avail. for all perfs. from 10 am on day of perf.

GLYNDEBOURNE. 0273 812411-813424. Sold Out—possible returns only. Wed & Fri at 5.10: Fidelio. Thurs & Sat at 5.20: Il ritorno d'Ulisse. With the London Philharmonic Orchestra.

SADLER'S WELLS THEATRE. Rosebery Ave., EC1. CC. 01-837 1672. LONDON CONTEMPORARY DANCE THEATRE. Evgs. 7.30. Wed. Mat. 2.00. Tomor & Wed: Waterless Method of Swimming Instruction. No Man's Land. Masque of Separation. Wed Mat: Waterless Method of Swimming Instruction. Masque of Separation. Thur, Fri & Sat: Scene Shift. Eos. Class.

THEATRES

ADELPHI THEATRE. 01-836 7611. Previews June 14, 15, 16 & 18 at 7.30. (Seats from 70p to £4). Opens Tuesday June 19 at 7.00. JOHN INMAN in The World Famous Farce CHARLEY'S AUNT. Box Office Now Open.

ALBERY. From 8.30 am incl. Suns. 836 3878. CC. Bookings 836 1071-3. Evs. 7.45. Thurs. and Sat. 4.30, 8.00. A THOUSAND TIMES WELCOME IS LIONEL BART'S OLIVER "MIRACULOUS MUSICAL." Financial Times. with ROY DOTRICE, GILLIAN BURNS, MARGARET BURTON. Party rates and student standby avail.

ALDWYCH. CC. 836 6404. Info. 836 5332. ROYAL SHAKESPEARE COMPANY in repertoire. Ton't 7.30 THE TAMING OF THE SHREW "There is no happier evening in London." F. Times. With: LOVE'S LABOUR LOST (Tomor, Wed m&e, Thur). Mikhail Bulgakov's THE WHITE GUARD (Fri, Sat m&e). RSC also at THE WAREHOUSE (see under W).

AMBASSADORS. CC. 01-836 1171. Evs. 8.00. Fri. and Sat. 5.30 and 8.30. DINSDALE LANDEN, GWEN WATFORD, DAVID BURKE, ANGELA DOWN in BODIES by James Saunders. "IT'S IMPACT HIT ME LIKE A THUNDERBOLT FROM JOVE. THE LANGUAGE BLAZES WITH WIT AND INTELLIGENCE AND ITS THEME ELECTRIFIES." Daily Mail. "WHEN WE HAVE LAUGHED AT ITS WIT, BEEN HELD IN THE GRIP OF ITS DRAMA AND REVELLED IN THE COLOURS AND LAYERS OF ITS LANGUAGE, BODIES STILL RAISES ECHO AFTER ECHO IN OUR MIND AND HEARTS. DINSDALE LANDEN'S PERFORMANCE IS WORTH GOING MILES TO SEE." Bernard Levin. BODIES "MR. LANDEN GIVES WHAT I INSIST IS THE BEST PERFORMANCE IN A MODERN PLAY NOW TO BE SEEN IN LONDON." E. News.

APOLLO THEATRE. CC. 01-437 2663. Evs. 8.00. Sat. 5 and 8. Mats. Th. 3.00. IAN LAVENDER, CHRISTOPHER TIMOTHY, JULIA FOSTER in HAPPY BIRTHDAY. A VERY FUNNY NEW COMEDY BY THE AUTHORS OF "BOEING BOEING." "FEYDEAU LIVES, CA VA!" Gdn. "IT WILL PROBABLY RUN AND RUN." Daily Mail.

ARTS THEATRE. 01-836 2132. TOM STOPPARD'S DIRTY LINEN. "Hilarious . . . do see it." Sun. Times. Monday to Thursday 8.30. Friday and Saturday 7.00 and 9.15. NOW IN ITS 4th YEAR.

ASTORIA. Charing X Rd. 5. CC. 01-734 4291 or 439 8031. Mon.-Thurs. 8 pm. Fri. and Sat. 6.00 and 8.45 pm. Reduced price preview June 6th. OPENS JUNE 7th AT 7.00 PM. LIVE ON STAGE! "GREASE" The musical sensation! Group bookings 01-437 3856.

AVENUE TICKET OFFICE. Queen's Theatre Foyer, Shaftesbury Ave. W1. Tel. 01-734 0261-0120. STUDENTS-SENIOR CITIZENS Standby tickets Mon.-Fri. on sale here 5 pm-7 pm for Apollo, Drury Lane, Globe, Her Majesty's, Palladium, Lyric and Victoria Palace (subject to availability).

CAMBRIDGE. 01-836 6056. Also open Sun 11 am-7 pm. CC. 01-836 7040. Mon.-Thurs. 8.00. Fri. and Sat. 5.00 and 8.30. CHICAGO. THE CRITICS RAVED ABOUT . . . THE HIT BROADWAY MUSICAL. Group bookings 01-437 3856.

CHICHESTER FESTIVAL THEATRE. 0243 781312. Season sponsored by Martini & Rossi. Today, Wed, Thur 7.0, Sat 2.0. THE EAGLE HAS TWO HEADS. Tomor, Fri, Sat 7.0, Thur 2.0. THE DEVIL'S DISCIPLE.

COMEDY THEATRE. CC. 01-930 2578. Mon. at 9.00. Mats. Fri. and Sat. 6.30. THE ONLY ROCK 'N' ROCK SHOW. THE ROCKY HORROR SHOW. SNACK BAR OPEN 1 HR. BEFORE PFS.

CRITERION. From 8.30 am incl. Suns. 01-930 3216. CC. Bkgs. 01-836 1071. Evgs. 8.00. Fri. and Sat. 5.30 and 8.30. LEWIS FIANDER, ELIZABETH ESTENSEN. CLOUDS "IS BLISS." Observer. "MICHAEL FRAYN'S FUNNIEST PLAY." D. Telegraph.

DRURY LANE. CC. 01-836 8108. Opens Tuesday 29 May at 7 pm. Evgs. 8 pm. Friday and Sat. 6 pm and 8.45 pm. BRASIL TROPICAL. THE STAGE EXTRAVAGANZA FROM THE RIO CARNIVAL. Season ends 16th June—Book Now.

DUCHESS. 01-836 8243. Mon. to Thurs. Evs. 8.00. Fri. and Sat. 5.30 and 8.15. OH! CALCUTTA! "The nudity is stunning." Daily Tel. Ninth Sensational Year.

FORTUNE. 836 2238. Eves. 8.00. Mats. Thurs. 3.00. Saturday 5.00 and 8.00. AGATHA CHRISTIE'S MURDER AT THE VICARAGE. FOURTH GREAT YEAR.

GREENWICH THEATRE. Evs. 8.00. Mats. Sat. 2.30. Molnar's THE PLAY'S THE THING. Adapted by P. G. Wodehouse. "Delightful. Witty . . . must be seen." S. Tel. "Exhilarating . . . splendidly cast." Obs. FOR BOX OFFICE TEL.: 01-858 4448 UNTIL FURTHER NOTICE.

GARRICK. CC. 01-836 4601. Eves. 8.00. (sharp). Wed 3.00. Sat. 5.30 and 8.30. DENNIS QUILLY in IRA LEVIN'S NEW THRILLER DEATH TRAP. "THREE CHEERS FOR TWO HOURS OF VERY INGENIOUS VERY FUNNY MARVELLOUS ENTERTAINMENT." S. Tel. "VERY EXCITING." Fin. Times.

THEATRES

GLOBE THEATRE. CC. 01-437 1592. Evs. 8.15. Wed. 3.00. Sat. at 6.00, 8.40. ALISON STEADMAN, CHRISTOPHER CASENOVE. JOKING APART. "ALAN AYCKBOURN has done it again. His latest comedy sparkles with wit." NoW. "SPLENDIDLY FUNNY." D. Ex. "IT'S A HIT, NO JOKING." S. Mirror.

HAYMARKET. 01-930 9832. Evgs. 8.00. Wed. 2.30. KEITH MICHEL, SUSAN HAMPSHIRE. SHERLOCK HOLMES MYSTERY. THE CRUCIFER OF BLOOD by PAUL GIOVANNI. "The kind of spectacle I cannot recall since boyhood . . . terrific stuff." News.

HER MAJESTY'S. CC. 930 6606. Evenings 8.0. Fri. & Sat. 5.15 and 8.45. AIN'T MISBEHAVIN'. The New Fats Waller Musical Show. "A RIOTOUS HIT." Daily Mail. "JUBILANT. THE BEST PERFORMANCE OF ANY MUSICAL IN LONDON." Obs.

KINGS HEAD. 226 1916. Dnr. 7. Show 8. FEARLESS FRANK. A Musical by Andrew Davies.

LYRIC THEATRE. CC. 01-437 3686. Evgs 8.00. Thur. 3.00. Sat. 5.00, 8.30. JOAN PLOWRIGHT, FRANK FINLAY, PATRICIA HAYES in FILUMENA by Eduardo de Filippo. Directed by FRANCO ZEFFIRELLI. Society of West End Theatre Award COMEDY OF THE YEAR, ACTRESS OF THE YEAR. "TOTAL TRIUMPH." Evg News. "AN EVENT TO TREASURE." D. Mirror. LIMITED SEASON ONLY.

MAYFAIR. 01-629 3036. Evenings 8.00. Sat. 6.00 and 8.45. A DAY IN HOLLYWOOD, A NIGHT IN THE UKRAINE. A MUSICAL REVUE. "Superlative non-stop comedy." E. News. "A scorcher of home-grown entertainment." Daily Mail. "A laugh riot . . . sheer fun . . . not to be missed. Treat yourself to a good time and see it." S. Express. "The funniest script the Marx Brothers never wrote." D. Mail.

NATIONAL THEATRE. "S" CC. 928 2252. OLIVIER (open stage): Wed 7.30 THE FRUITS OF ENLIGHTENMENT by Tolstoy trans by Michael Frayn. LYTTELTON (proscenium stage): Ton't 7.45 FOR SERVICES RENDERED by W. Somerset Maugham. Tomor 7.45 Close of Play. COTTESLOE (small auditorium): Ton't & Tomor at 8.0 Michael Herr's DISPATCHES adapted for the stage by Bill Bryden and the company (perhaps not suitable for children). Excellent cheap seats from 10 am day of perf all 3 theatres. Car park. Restaurant 928 2033. Credit card bookings 928 3052.

OPEN AIR REGENT'S PARK. CC. 486 2431. A MIDSUMMER NIGHT'S DREAM. Opens Tonight Evgs 7.45, Mats Wed, Thur & Sat 2.30.

OPEN SPACE. 387 6969. Transfers from Kings Head Th. for Limited Season. FIFTY WORDS: BITS OF LENNY BRUCE. Tues.-Suns. 8.00 pm. Late Night Show Sat. 10.15 pm.

PALACE. CC. 01-437 6834. Mon.-Thurs. 8.00. Fri. & Sat. 6.00, 8.40. JESUS CHRIST SUPERSTAR by Tim Rice and Andrew Lloyd-Webber.

PALLADIUM. CC. 01-437 7373. SPECIAL MATINEE PREVIEW WEDNESDAY 2.45. YUL BRYNNER in RODGERS AND HAMMERSTEIN'S THE KING AND I also starring VIRGINIA McKENNA. OPENS TUESDAY 12th JUNE. BOX OFFICE NOW OPEN. HOTLINE 01-437 2055. Please note public preview Mon. June 11 now at 7 pm, not 7.30 as previously advertised.

PHOENIX THEATRE. CC. 01-836 2294. Evs. 8.00. Wed. 3.00. Sat. 5.00 and 8.30. DIANA RIGG, JOHN THAW in NIGHT AND DAY. A new play by TOM STOPPARD. Directed by Peter Woods. BEST PLAY OF THE YEAR. Evening Standard Drama Award.

PICCADILLY. From 8.30 am incl. Suns. 437 4506. CC bks. 836 1071. Evgs. 8. Thu. 3. 8. Sat. 5.30, 8.30. PETER BARKWORTH, HANNAH GORDON in Brian Clark's new play CAN YOU HEAR ME AT THE BACK? "A GOOD PLAY. A LIVELY EVENING." Gdn. "Highly articulate, persuasive and witty." D. Mail. "The dialogue leaps wittily from the literary to the flippant and on to the cruelly perceptive." D. Tel. "A SUPERBLY ABSORBING PIECE OF ENTERTAINMENT." The Sun.

PRINCE EDWARD. CC. 01-437 6877. Evenings 8.00. Mats. Thurs., Sat. 3.00. EVITA by Tim Rice and Andrew Lloyd-Webber. Directed by Harold Prince.

PRINCE OF WALES. CC 01-437 6877. Card bookings 930 0846. Mon., Thurs. 8.00. Friday and Sat. 6.00 and 8.45. ALAN AYCKBOURN smash-hit comedy. BEDROOM FARCE. "If you don't laugh, sue me." D. Exp. A National Theatre Production.

QUEEN'S THEATRE. CC. 01-734 1166. MICHAEL CRAWFORD, CHERYL KENNEDY in FLOWERS FOR ALGERNON. A New Musical. Reduced price previews Evenings 8 pm. Opens June 14 7.0 NOW BOOKING.

RAYMOND REVUEBAR. CC. 734 1593. At 7.00, 9.00, 11.00 pm. Open Suns. PAUL RAYMOND PRESENTS THE FESTIVAL OF EROTICA. Fully air-conditioned. 21st YEAR.

RIVERSIDE STUDIOS. 01-748 3354. Evs. Tues.-Sun. 7.30. Sat. 2.30, 7.30. Shakespeare's MEASURE FOR MEASURE. Directed by Peter Gill.

ROYAL COURT THEATRE UPSTAIRS. 730 2554. Prev Ton't 7.30. Opns Tomor 7.00. Subs. Evs. 7.30. AN EMPTY DESK, by Alan Drury.

ROYAL COURT. 730 1745. Prevs. Tomor & Wed at 8. Opens Thur at 8. Subs Evgs 8. Sats 5 & 8.30. Regret no late comers. BILLIE WHITELAW in SAMUEL BECKETT'S own production of HAPPY DAYS.

ROYALTY. CC. 01-405 8004. Monday-Thursday evenings 8.00. Fridays 5.30 and 8.45. Saturdays 3.00 and 8.00. BUBBLING BROWN SUGAR. NOW IN ITS 2nd GREAT YEAR. Book by telephone for the entire family.

ST. MARTIN'S. Credit cards. 836 1443. Evenings 8. Mats. Thurs. 2.45. Sat. 5. 8. AGATHA CHRISTIE'S THE MOUSETRAP. WORLD'S LONGEST-EVER RUN. 27th YEAR.

SHAFTESBURY. 836 6596. CC. 836 4255. Evs. 7.45. Wed., Sat. 4.30 and 8.00. BAWDY COMEDY MUSICAL CANTERBURY TALES. "LOTS OF SEX PLEASE WE'RE BRITISH SUMS UP THE SHOW'S APPEAL." D. Mr. "DECENT, HONEST TRUTHFUL." Fin. Times. SPECIAL SUMMER SEASON.

SAVOY THEATRE. 01-836 8888. Credit Cards 01-734 4772. BILL PATERSON in WHOSE LIFE IS IT ANYWAY? by BRIAN CLARKE. "A MOMENTOUS PLAY. I URGE YOU to SEE IT. IT STIRS THE HEART AND ACTIVATES THE MIND. LIKE NOTHING ELSE IN LONDON." Guardian. WHOSE LIFE IS IT ANYWAY? "IS A BLAZING LIGHT IN THIS SEASON." N.Y. Times. WHOSE LIFE IS IT ANYWAY? "I HAVE RARELY FELT SO GRIPPED. MY ATTENTION HAS NEVER WANDERED LESS. AND I HAVE NEVER FELT SO CONSCIOUS THAT EVERYONE IN THE HOUSE WAS REACTING AS I WAS." Obs. Evg. 8.00. Sats. 5.45 and 8.45. Red. Price Matinees Weds. at 3.00. 2ND GREAT YEAR.

THEATRES

STRAND. 01-836 2660. Evenings 8.00. Mats. Thurs. 3.00. Sats. 5.30 and 8.30. NO SEX PLEASE—WE'RE BRITISH. LONGEST-RUNNING COMEDY IN THE WORLD.

STRATFORD-UPON-AVON. Royal Shakespeare Theatre (0789) 292271. Tickets immediately available for RSC in CYMBELINE June 15, 18, 21. THE MERRY WIVES OF WINDSOR June 16 (mat), 21 (mat) 23. Recorded booking info (0789) 69191. Sunday 24 June: PASADENA ROOF ORCHESTRA.

ST. GEORGE'S SHAKESPEARE THEATRE. Tufnell Park Road, N7. 01-607 1128. Ton't, Tomor, Wed evgs at 7.30, Tue & Thur mats at 2.30. JULIUS CAESAR "BERNARD HEPTON—the Caesar we always want to meet and seldom do." J. C. Trewin. Thur, Fri, Sat at 7.30 RICHARD II "Full of English resonance and energy." D. Tel. Tickets also bookable at the Theatre Shop Phoenix Theatre.

TALK OF THE TOWN. CC. 01-734 5051. AIR CONDITIONING. CREDIT CARDS. CELEBRATING 21 YEARS. From 8.00. Dining and Dancing. 9.30 SUPER REVUE BUBBLY. At 11 MADELINE BELL.

VAUDEVILLE. CC. 01-836 9988. Evs. 8.0. JEAN KENT and JOYCE CAREY (as Miss Marple) A MURDER IS ANNOUNCED by AGATHA CHRISTIE. "VINTAGE PIECE OF CHRISTIE WHODUNITRY." Sunday People. "WELL-LOVED PARTY GAME BY THE BEST CONJUROR IN THE BUSINESS." F.T. Last Week.

VAUDEVILLE. CC. 01-836 9988. Open Tue. June 12 at 7. Subs. evgs. 8. Sats. 5 and 8.30. First Wed. mat. 27, 2.45. EDWARD FOX in THE FAMILY REUNION by T. S. ELIOT. (BOOK NOW)

VICTORIA PALACE. CC. 01-828 4735-6. 01-834 1317. Evgs. 7.30. Mats. Wed. and Sat. 2.45. STRATFORD JOHNS, SHEILA HANCOCK in ANNIE. "BLOCKBUSTING SMASH-HIT MUSICAL." Daily Mail. Best Musical of the Year. 1978, E. Stan.

WAREHOUSE. Donmar Theatre, Covent Garden. Box Office 836 6808. Royal Shakespeare Co. Ton't 7.30 THE MERCHANT OF VENICE (sold out). Adv. bkgs. Aldwych.

WESTMINSTER. CC. S. 834 0283. Evgs. 7.45. Mats. Wed. & Sat. 3.00. The Musical Theatre Company. THE MIKADO. Company includes: Chris Booth-Jones, Fiona Dobie, Ann Hood, Neil Jenkins, Rosemary Jenner, Thomas Lawlor, Martin McEvoy, Philip Summerscales, Alison Truefitt. LIMITED SEASON.

WHITEHALL. CC. 01-930 6692-7765. Monday to Thursday 8.00. Fri. and Sat. 6.10 and 8.50. IPI TOMBI. The African Musical Explosion. A pulsating riot of Dance and Song. FOURTH GREAT YEAR.

WIMBLEDON THEATRE. 01-946 5211. The Broadway, SW19. Last perfs. Tonight 7.30. Tomorrow 5 & 8.15. Gemma Jones, Patricia Routledge in a new comedy with music AND A NIGHTINGALE SANG. "C. P. Taylor's roaring, funny and sensitive comedy." BBC.

WINDMILL. CC. 437 6312. Nightly at 8.00 and 10.00. Sunday 6.00 and 8.00. Paul Raymond presents RIP OFF. The erotic experience of the modern era. Now showing new second edition. New girls, new acts, new production.

WYNDHAM'S. From 8.30 am inc. Suns. 01-836 3028. Credit card bkgs. 836 1071. Mon.-Thur. 8.00. Fri. and Sat. 5.15, 8.30. "ENORMOUSLY RICH." Mary O'Malley's smash-hit comedy ONCE A CATHOLIC. "VERY FUNNY." E. News. "Sure-fire comedy of sex and religion." Daily Tel. "MAKES YOU SHAKE WITH LAUGHTER." Guardian.

YOUNG VIC. 928 6363. Evgs. 7.30. Joe Orton's WHAT THE BUTLER SAW. "Deliriously funny." Times. Until June 23.

CINEMAS

ABC 1 and 2, Shaftesbury Ave. 836 8861. Sep. Perfs. ALL SEATS BKBLE. 1: THE DEER HUNTER (X). Wk. and Sun. 2.15, 7.30. 70 mm Dolby stereo. 2: THE TOWERING INFERNO (A). Wk. & Sun. 2.45, 7.40. 70 mm stereo.

CAMDEN PLAZA. Camden Town. 485 2443 (opposite Tube). MAX OPHULS' MADAME DE . . . (A). Progs. daily 2.05, 4.15, 6.30, 8.50.

CLASSIC 1, 2, 3, Haymarket (Piccadilly Circus Tube). 01-839 1527. 1: THE WORLD IS FULL OF MARRIED MEN (X). Progs. 1.15, 3.30, 5.50, 8.10. 2: THE HUMANOID (A). 1.25, 5.15, 9.05. SINBAD AND THE EYE OF THE TIGER (U). 3.10, 7.00. 3: Gregory Peck, Laurence Olivier, THE BOYS FROM BRAZIL (X). Progs. 2.20, 4.55, 7.40.

CLASSIC 1, 2, 3, 4, Oxford Street 636 0310 (opp. Tottenham Court Rd Tube). 1: THE WARRIORS (X). Progs. 1.05, 3.25, 5.50, 8.15. 2: Robert Mitchum RYAN'S DAUGHTER (AA). Sep. perfs. 2.00, 7.15. 3: THE WORLD IS FULL OF MARRIED MEN (X). Progs. 1.45, 3.55, 6.05, 8.25. 4: KENTUCKY FRIED MOVIE (X). Progs. 1.35, 3.45, 5.55, 8.10.

CLASSIC, Leicester Square. 01-930 6915. DEATH COLLECTOR (X). 2.55, 6.05, 9.15. MEAN DOG BLUES (X). 1.10, 4.20, 7.30.

CLASSIC POLY, Oxford Circus (Upper Regent St.) 637 9863. Ingrid Bergman, Liv Ullman, AUTUMN SONATA (AA). Progs. 1.30 (not Sun.), 3.45, 6.00, 8.15.

CURZON, Curzon Street, W1. 499 3737. Grand Prix Cannes '78 THE TREE OF WOODEN CLOGS (A). A film by OLMI (English subtitles). Daily at 2.30 and 7.15. Sundays at 3.40 and 7.15. "A great film and a rewarding experience." The Observer.

LEICESTER SQUARE THEATRE. 930 5252. THE MUPPET MOVIE (U). Sep. progs. Dly. 2.00, 5.15, 8.30. Seats bkble in advance for 8.30 prog Mon-Fri.

ODEON LEICESTER SQUARE. 930 6111. THE LADY VANISHES (A). Sep. progs. Wks. doors open 1.45, 4.45, 7.45. All seats bkble in advance at Box Office or by post.

ODEON MARBLE ARCH W2 (723 2011-2). THE SHAPE OF THINGS TO COME (A). Sep. perfs. Wk., doors open 2.00, 4.45, 7.45.

PRINCE CHARLES, Leic. Sq. 437 8181. Dustin Hoffman, Vanessa Redgrave AGATHA (A). Sep. perfs. daily (inc. Sun.) 12.40, 3.10, 5.55, 8.35. Late Show Fri. and Sat. 11.15. Seats bkble. Licensed Bar.

SCENE 4, Leicester Square (Wardour St.). 439 4470. I NEVER PROMISED YOU A ROSE GARDEN (X). Progs. 1.25, 3.45, 6.00, 8.20. Late Show Fri. and Sat. 10.40.

STUDIO 2 and 4, Oxford Circus. 437 3300. 2: Agatha Christie's DEATH ON THE NILE (A). Progs. 2.30, 5.25, 8.10. Late Show Sat. 10.40. 4: THE DEER HUNTER (X). Sep. Perfs. Daily 12.30, 4.05, 7.40. Late show Sat. 11.20. Seats bookable. Lic'd bar.

THE ARTS

New End

Portrait of Dora

by ANTHONY CURTIS

Dora was one of Freud's earliest patients. She was an asthmatic who suffered from periodic bouts of loss of voice and nervous coughing. Freud regarded these as hysterical symptoms and probed into her memories to try to understand them. After three months of analysis she broke off her sessions with him; but he regarded her inconclusive case as worth writing up and publishing. His work with Dora confirmed the validity of the methods of treatment he was developing around the turn of the century, and he drew important lessons from the material concerning the nature of dreams, repressed desires, and so on.

When she was 18 Dora had been taken by her father to stay in the Alps with a young married couple and their children. She was to have remained with them after her father's departure to Vienna but she decided to return with him, alleging that Mr. K, their host, had made an improper proposal to her while they were on an afternoon stroll around the lake. Freud went over this episode with Dora again and again, trying to determine what really happened, amplifying it with two subsequent dreams she has about the Ks.

Freud came to believe not only that Dora was in love with Mr. K, but that her father had had an affair with Mrs. K, and that on an even more obscure, unconscious level Dora wanted to be the lover of Mrs. K identifying with her father. He also concluded that her sudden breaking off of the treatment with him after he had elucidated part of the mystery was a repeat of her abrupt departure from the Ks, prompted by her transference of her love for Mr. K to her analyst, a process which he had failed to understand at that time.

The writer of the programme note to this dramatised version of the girl's analysis suggests that Freud really was in love with Dora which was why she left and why he failed to understand her case completely. This last twist does not really make much difference to the theatrical happening which Hélèn Cixous, translated by Anita Barrows, has scripted from Dora's traumas and which Simone Benmussa has brought delicately to life upon a tiny stage. The method of the production is to present the audience for an uninterrupted hour-and-a-half with a series of enigma variations on that moment by the lake and all that followed from it, to re-create in the form of a carefully structured verbal ballet the changing moods and patterns of the treatment.

In contrast to the nature of the revelations the exterior is formally elegant. All five principals including Freud (Terence Bayler who badly lacks the required severity) wear stylish white costumes and talk with unnatural deliberation. During their colloquies they take up poses on different levels of the set like dancers: Caroline Langrishe as Dora in the centre with Sheila Gish and Gérard Falconetti as the Ks coming down from on high to embody her fantasies, and her father (Neil Phelps) suddenly appearing to scold or reassure.

All five well sustain the slow haunting rhythm the director requires. Their movements are mirrored from time to time by short clips of silent colour-film projected on an invisible screen where we see five seemingly innocuous and carefree people taking that fatal walk around the lake. This is an evening totally lacking humour or tension but curiously poignant.

Caroline Langrishe and Sheila Gish

Revised plans for National's exhibition

The scope of the National Gal-ry's major loan exhibition for 979, to be held from September -November 30, has been hanged to concentrate on a ingle school of painting. The xhibition was to have been evoted to both Genoese and enetian 17th century paintings, but will now consist only of Venetian paintings of the period. It will be retitled *Venetian Seventeenth-Century Painting*.

All the loans for the exhibition are coming from public and private collections in Britain and Ireland. It will consist of 53 Venetian 17th century pictures

Premières at Bath

by MAX LOPPERT

Even by its own standards, the Bath Festival has been this year a brilliant success, a mixture calculated to a nicety by William Glock to stir, stimulate, and delight on many fronts. Had there been no more than the two new works by Tippett and Elliott Carter, presented at either end of the Festival, it would have been an exceptional Festival; with Bach, Handel, Maxwell Davies, Michael Finnissy, and liberal doses of chamber music and solo recitals by performers carefully chosen for their special qualities, the cup ran over.

Carter's *Syringa* is dedicated to Sir William and Lady Glock; it had its first performance in New York last December, and its first European performance—Sarah Walker, Neil Howlett, and 11 players of the Nash Ensemble under Lionel Friend were the expert participants—in the Guildhall last Wednesday. It follows on from Carter's *A Mirror On Which To Dwell*, the song cycle of the middle 1970s that marked the composers return to the human voice after so many years of purely instrumental exploration and innovation.

The newer ipece might, however, be described as *two* song cycles, which happen to be performed simultaneously, in a manner that amounts to a simultaneous re-telling and re-examination of the Orpheus legend. The mezzo-soprano sings John Ashbery's long, wittily phrased, beautifully cool poetic rumination on the legend and its later recrudescences and significances; the bass-baritone is given ancient Greek texts, declaimed in the original, which Carter himself culled from Plato, Mimnermus, Sappho, Aeschylus, and Ibycus in order to create "the sublimal background that might be evoked in the mind of a reader." Separately and simultaneously, sometimes in concord and sometimes in conflict, the voices pursue their courses. Tensions are set up between them, and between the two languages, types of music, worlds distinctly brought into being; in such tensions one senses the typical Carter ebb and flow of argument.

As ever when faced with a new Carter piece, one's first impression was of bracing energy, tight-packed invention, muscular instrumental interplay, an overall elation of the mind and the senses. In the Guildhall, whose reverberant acoustics blurred a good deal of the inner detail, such an impression was all that was allowed. Though the performance seemed confident, and by the soloists (and by Timothy Walker's guitar, an important solo element) the lines were lyrically and meaningfully shaped, I could not make full or satisfying contact with the "tender, lapped melodies" that Andrew Porter praised when he wrote about Syringa on this page in January. No need to worry. Carter inspires trust—one knows from past experience that pieces dense and confusing on first hearing reveal their subtleties and beauties soon after. I look forward eagerly to the Nash Ensemble's first London performance later in the year.

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On Friday in the same resonant Guildhall, the Arditti Quartet premiered *Refrains IV* by Buxton Orr: an attractively argued piece of 12-note writing, refreshingly competent in its technique, not at all difficult to follow. Four linked movements transformed an opening "refrain" whose sharp rhythmic definition made it easy to recognise; a clear oscillation between major and minor thirds made up the potently simple expressive material. The muted pile-up of the slow movement and the central pizzicato episodes in the third were a little predictable, but the finale worked together all the material coherently and strongly. Will we hear it again?

The piece was excellently played by the Arditti Quartet, who also gave us Ligeti's picturesque (the adjective is not meant to be entirely dismissive) Second Quartet and Webern's Bagatelles Op 9. The composer and pianist Michael Finnissy played two of his own pieces and one by Nigel Osborne. The latter (Figure/Ground) was superb: inspired by Chopin and the Polish landscape, it was not derivative: but had all the ruminative power of a Debussy prelude, beautifully shaped and deeply poetic. I could make little of Finnissy's two little sketches—one a bare folk tune, misty with sustaining pedal, the other a growling bass-register tribute to Jelly Roll Norton. These were workshop fragments, conciously arch—perhaps they sounded well in front of the vast primary-coloured canvases of Amsterdam's Stedelijk Museum (where they were first heard), but they seemed mighty odd in front of the Guildhall's portraits of a King George I and Queen Charlotte.

NICHOLAS KENYON

Festival Hall

Argerich by NICHOLAS KENYON

London appearances by Martha Argerich have become so rare in recent years that each turns into an event. At an age when she might be living the Concerto Commuting Circuit, Miss Argerich has, instead severely restricted her concert performances. I presume that it is a matter of choice on her part, for after an account of Prokofiev's Third Concerto such as she gave yesterday afternoon with the London Symphony Orchestra, there can surely be no orchestral promoter in the world who is not begging for her services.

In the last Leeds Piano Competition but one, this thundering Prokofiev concerto was played not only by the winner but by two other finalists as well. It was easy to think in the midst of all the pounding octaves and dazzling passage-work that it would be better to judge a pianist's musicality from eight bars of any Mozart concerto movement than from the whole of this show-off piece. But Miss Argerich showed how a true musician can transform the work, making each tiny note sing and glitter, giving each flourish its proper weight and substance. The few slower exposed passages for the piano were utterly compelling — the announcement of the second movement's variation theme (precisely graded, phrased with a solid sense of direction), the Stravinskian staccato/chromatic fragment in the finale (done without a traceof skittishness, the tone biting into the keyboard). And in the brilliant sections, Miss Argerich's finger articulation sang further into the piano than many other pianists' elbow weight.

Michael Tilson Thomas conducted the LSO with a cold, vital precision which suited this work. He also directed Chaikovsky's *Manfred* Symphony and Mussorgsky's *Night on the Bare Mountain*—in the latter we practically froze to death. The clarity of his clipped beat brought nothing we had not heard before from the LSO players, and failed to encourage the warmth and drama in the music.

Elizabeth Hall

Stephen Bishop-Kovacevich

by DAVID MURRAY

There are a few pianists with the happy knack of compensating for the acoustic oddities of the Elizabeth Hall, but generally a piano sounds a little awash there, as Mr. Bishop-Kovacevich's did yesterday afternoon. He took a characteristically personal, introspective line with his Beethoven and Schubert, and the delicate pedal-haze he seemed to intend often became a thick mist. Beethoven's scrupulous markings in the op. 101 Sonata—carefully indented phrases, light staccato basses, dotted figures with a rest in the middle distinct from those without one—were blurred away into a universal legato. The main subject of the Finale (dit-DA, di-di-di-DA) sounded less bright and infectious than usual as "dee-da, di-di-di-dah."

Fortunately, the pianist's thoughtful tenderness with the music made for a reading of full conviction, despite being rendered in watery pastels. The Allegretto theme wound questionably through the score as though seeking reassurance, and the little Adagio movement was made the confessional heart of the sonata. With the Bagatelles op. 126 he adopted a more angular manner, with rude dynamic contrasts and deliberately abrupt endings; the B minor Bagatelle, briskly attacked, lost something to lavish pedalling again, but the limpid innocence of the G major one was appealing. The treatment was highly self-conscious; opinions may differ about whether these strange, even gnomic pieces gain or lose by that.

Bishop-Kovacevich undertook Schubert's last Sonata, the B-flat, as if its "heavenly length" were simply an unproblematic fact needing no apology: the Molto moderato, with broad ruminative pauses, was awarded its full repeat, and the succeeding Andante sostenuto continued in the same brooding vein without much contrast. The grand theme of the Molto moderato was less majestic than anxiously restrained—a worried note always entered it after the first phrase, and the movement was marked by outbursts of some violence (the ostinato notes in the accompaniment twanged obtrusively). The desolate suggestions of the Andante were left unresolved by the Scherzo and Rondo, the former twinkling lightly — no threat in the skewed beat of its Trio —and the latter ripping amiably through to its wittily delayed close. Every bar of the Sonata was sensitively weighed, and much of it was moving; the overall shape of the work was left ambiguous, which may be exactly how the pianist takes it to be.

Tina Jones

Leonard Burt

Young Vic

What the Butler Saw

by ANTONY THORNCROFT

When Joe Orton's last play, *What the Butler Saw*, was first produced, two years after his Ortonesque death, there was uproar in the gallery and Sir Ralph Richardson found himself booed by puritans and patriots. Now, a decade later, it nestles happily in the Young Vic repertoire, attracting the kind of youthful and family audience which has recently laughed at *Charley's Aunt* and *The Importance of Being Earnest* in the same theatre.

Orton is a conscientious successor to both, with epigrams which are the equal of Wilde's, and much less affected, and a frenzy in the plot which would have stretched the resources of Brandon Thomas. *What the Butler Saw* is among the very best of modern farces because the seriousness of its message never intrudes on the fairly continuous laughs. Orton so easily milks from his theme of madness, real and apparent.

The opening scene, in which the psychiatrist in a private mental home attempts to seduce a new secretary and thus opens the floodgates to chaos, is among the funniest written in recent years and although events rather predictably prove that the only lunatic in sight is the Lunacy Inspector, the plot is never allowed to interfere with the wit and the pace. There is a typical Orton sub-plot about a missing part of Sir Winston Churchill which now seems rather dated, but what comes over most strongly is the good humour of it all: Even the police are here treated gently. By the end the frenzy may be getting rather exhausting, and the imagination flagging, but rarely can there have been such a well-written romp; some of the lines on sexual politics, a rich field of irony for Orton, are treasures.

The 1969 production featured heavies like Coral Browne, Stanley Baxter and Julia Foster, as well as Sir Ralph, and the the theatrical establishment's way of acknowledging Orton's genius. This version veers towards the lightweight. There are, however, good perforances by John Darrell, as the head of the clinic, who attempts to remain rational amid the irrational; and Tina Jones and Philip Davis switch clothes and sexes effectively. Kate Versey is a credible nymphomaniac, and on a solid hard-working set the direction by Michael Attenborough, his first for the Young Vic, is unmannered, allowing the play to speak for itself, a masterpiece of civilised hysteria.

King's Head

Fearless Frank

by MICHAEL COVENEY

As befits its subject, Frank Harris, this wholly delightful small-scale musical by Andrew Davies and Dave Brown is aggressive, seductive and rude. In terms of choreography, lyrics, ensemble attack and sheer vitality, there is nothing to rival it on the London stage. And the King's Head has less of a stage, more of a postage stamp, its limitations ingeniously disguised by Martin Tilley's design and the speed of an alert company.

Harris is given lubricious, indefatigable life by Bill Stewart, an actor I have long admired who here seizes on the chance of a lifetime. Squat, myopic, red-nosed and raucous, he is Harris to the tips of his sweaty moustache, making lascivious darts for his secretary's legs as he launches into the account of his life and loves in a South of France café. Flashback, so often a hindering technique in the theatre liberates the cartoon approach of Robert Gillespie's unbeatable production. What emerges is the picture of a man as ridiculous as he was funny, as frustrated as he was ambitious, as sad as he was relentless in a life dedicated to freedom in thought, speech and love.

We see Harris quoting Virgil as a New York shoe-shine boy and landing a job with a Chicago hotelier; riding on a hobby-horse across the Western plains; hobnobbing with Wilde, Whistler and Dowson in the Cafe Royal; picking up tips from Maupassant in a sensationally witty and gently obscene Parisian slow waltz number, "*Ye Maître De La Conte*." Less emphasis is laid on his contribution to popular journalism at the Evening News or on his brilliant achievements as editor of the Saturday Review. But you cannot have everything—Mr. Davies prefers to leave us with Harris helping out the hounded Oscar, not pursuing the unsavoury rows that followed publication of the biography—and for what we have received, I, for one, am truly grateful.

Mr. Brown's score seems to me almost perfect in its combined tone of musical parody and critical appreciation of Harris. In this, he is greatly abetted by a superb company. Not just a chorus, this, but a sharply contrasted selection of talented personnel, among whom Oliver Pierre, Tony Scannell, Mandy More and, my particular favourite, Nichola McAuliffe (the best new performer of the year), are outstanding.

In what is generally a real gam of a show, I shall not soon forget the girl's group seduction of young Harris, neatly turning the tables on his Casanova reputation; or the marvellous idea of Enid Bagnold as an ingenious dapper twirling round the office of a ladies' magazine. If you cannot (or will not) get into *Evita* or *Chicago*, try an evening at the best British musical for ages. At £4.25 for dinner and show, this must be the best value in London.

Fonteyn to present BBC TV series on ballet

Margot Fonteyn is to introduce and narrate a BBC Television series about ballet, to be screened this autumn on BBC-2. Called *The Magic of Dance*, the six-week series will present her personal survey of dance from the time of Louis XIV, at the Court of Versailles tothe present day.

Separate programmes will concentrate on different epochs in the history of dance. Fonteyn herself will be seen dancing one of her most famous roles, in a complete performance of *Marguerite and Armand*.

A wealth of archive documentation and film is to be included in the series which includes sequences filmed in Shanghai, where Margot Fonteyn spent most of her childhood, until she left to join Sadler's Wells: Greece, where she goes to explore the legend of Isadora Duncan: Hollywood, where she meets Fred Astaire, and talks to Sammy Davis Jnr. about tap-dancing: Sweden, where she visits the last remaining theatre in the world where ballets are performed just as they were over 200 years ago, and also includes matesrial shot in Russia, Spain and Italy.

CRICKET BY TREVOR BAILEY

Cost of the Packer peace pact

APPILY, the bitter conflict etween the cricket establish-ient and World-Series Cricket over so that for the first time r two years those England layers with Packer contracts re available for selection for r national 11.

Predictably, our selectors ave chosen to ignore them for e Prudential Cup and relied those who regained the shes plus Gatting and Larkins. oth these talented youngsters re ideally suited to the require-ients of this competition, but hether that applies to rearley and Boycott is less ertain.

It was inevitable that the ustralian Board of Control ould agree to a compromise hich suited Kerry Packer, d will eventually fill their ear-empty coffers. They were financial trouble, as gate eceipts for the series between ngland and their own colour-ss 11 were well down, while sts for both Tests and inter-ate games have risen dramati-ally.

The two other tourists apable of drawing large rowds for genuine tests in ustralia, the West Indies and Pakistan, could do so only by including their WSC players.

Australian Boards of Control have tended to be autocratic, short of tact, and ultra-conservative. They had rows with players before the First World War, while the controversial Ian Chappell seemed more or less at war with them throughout his reign as captain.

The opposition provided by WSC proved far stronger than the board expected, and was increasing.

Though it is too early to judge the full effect of the Packer revolution, it is safe to say the game will never be quite the same again, and that it has brought both advantages and disadvantages.

First, player power, like player pay, has increased enormously. The ICCC was unable to withstand WSC, but the players if they had felt the rewards were insufficient or the demands too great could have ended the WSC monopoly once existing contracts expired.

It is to be hoped that the players use their new power wisely. If they ever believe, and I'm sure they will not, that they are more important than the game, cricket is heading for oblivion.

Secondly, the strength of the ICCC has been greatly reduced. The dictates for future international tours will be increasingly determined by financial considerations.

It was inconceivable until Packer that both England and Australia would go back on their commitments to a triangular tournament with India because a television company, quite understandably, wanted the West Indies to be included.

Packer has acquired the exclusive television contract for the next three years in Australia, and the rights to promote the Board's cricket for the next decade, as well as the Australian team wearing the WSC emblem in limited-overs cricket. As a result I expect there will be international cricket in Australia, both Test and one-day, for the next 10 years, and that his dream of a world knockout tournament will materialise..

Inevitably this must mean even more cricket.

Thirdly, the Tests have been seriously devalued for the past two years, because of defection of so many of the best players to WSC. This has reduced the importance of playing for one's country.

Cricket is following the lead of tennis, where money is the first consideration and one's country the next.

Finally, WSC with night cricket, the popular rising of the limited-overs game and a well-planned marketing operation have brought a new dimension to the sport.

Cricket has become increasingly dependent on commercialism in order to exist at professional levels, but as the prizes have become larger there has been a decline in standards, as exemplified by that notorious Somerset declaration which led to their expulsion from the Benson and Hedges Cup.

There was little fun and laughter in the super-test between Australia and the Rest of the World, when the one act of chivalry came from Ian Chappel; and events in the Caribbean last winter were hardly in keeping with cricket.

This leaves one qustion: "What of soul is left, I wonder, now the war has had to stop?"

TENNIS BY JOHN BARRETT IN PARIS

French revolution in facilities

THE MANY thousands who have flocked to the 49th French Championships in a delightful corner of the Bois de Boulogne, have savoured the quality of play produced by the strongest men's and women's fields for years.

No fewer than 36 of the top 40 men challenged this time, and all but three of the top women—thanks to the death of Team Tennis in America.

It is fitting, therefore that the French in 1978, following the celebration of the 50th year at the Stade Roland Garros, embarked upon a building programme, the first stage adding tremendously to the pleasure and comfort of spectators.

The vast concrete centre court has been extended to accommodate another 2,500 spectators and a new paved piazza with fountain has replaced the dusty walk between the centre court and the site of a new circular 4,500-seat mini-stadium at the foundation stage.

New changing and restaurant facilities and plans to build three covered courts with three outdoor courts on a flat roof, bear testimony to the same faith in the future of the game that was apparent last summer at the new U.S. tennis centre at Flushing Meadow in New York.

In three weeks we shall be hearing about the impressive modernisation and extension at Wimbledon and in August there will be the opening of the $7.5m Indianapolis sports centre, the brain-child of former USTA president Stan Malless.

At the last 16 stage in Paris, there is a look of ominous precision about the men's favourite, Bjorn Borg of Sweden, who, as at Wimbledon, will have the opportunity to write a page in the game's history. No other male player has won four times on this slow red dirt which surely must be the most demanding surface in the world—at least physically.

Borg, just 23, is in his prime. After a careful start against Tomas Smid of Czechoslavakia and a difficult win in four sets against Tom Gullikson, the left-handed of the American twins, there seems little evidence of the groin injury which forced his withdrawal from the German Open in Hamburg two weeks ago. Poor Ray Moore of South Africa could win only four games in three sets against him on Saturday.

If John McEnroe, the sensational young American left-hander, makes the same speedy recovery from a similar injury sustained in Tokyo—a misfortune which kept him out of Paris—the anticipated clash between these two at Wimbledon will have a special edge to it because Borg's chance for immortality hangs on the capture of a fourth consecutive singles title.

The top ladies' seed, Chris Evert-Lloyd, has been only slightly less impressive.

After two successful rounds where a mere seven games were lost, there was a recurrence on Saturday of the temporary lapse in concentration which has afflicted the world champion's game since she resumed serious competition following her April marriage to Britain's John Lloyd.

That she should have lost a set at all to the young Argentine Ivana Madruga was in itself noteworthy but that it should have occurred after an initial lead for the American of 4—0 was astonishing. However, that temporary lapse apart, Mrs. Lloyd continues the week-by-week improvement on her favourite clay surface that began with the Federation Cup in Madrid last month.

The loss in Rome to the little American Tracy Austin that ended the 125-match winning sequence from 1973 was probably a relief and in the absence of both Miss Austin and the self-exiled Czech, Martina Navratilova, the two most serious challengers to her crown. I shall be surprised if the 24-year-old American does not win her third French title, adding to those she won in 1974 and 1975, the last time she played in Paris.

Impressive as this would be, Mrs. Lloyd would still have some way to go to equal the prodigious feats of the remarkable Australian, Margaret Court. Over a period of 12 years, first as Miss Smith and then as Mrs. Court, she collected 24 titles at the four major singles championships, won 18 in doubles, and captured 17 mixed titles. If you include the championships of Italy, Germany and South Africa, her trophy bag contains an astonishing 90 titles.

THE MANAGEMENT PAGE

EDITED BY CHRISTOPHER LORENZ

Frank Lipsius outlines how a company that once dominated the U.S. canning business has recently shifted towards consumer markets

How American Can recorded a change of direction

IN THE 1960s, when the post-war baby boom produced a generation of new teenage consumers, no business attracted more corporate attention than music, notably pop music.

The business is still mushrooming—it is growing five times as fast as the American gross national product—but it has not been without its attendant dangers, as some companies found to their expensive and embarrassing cost.

When Gulf & Western, the conglomerate which purchased Paramount Pictures, brought a record company, Paramount Dot, the corporate chairman promised fantastic growth.

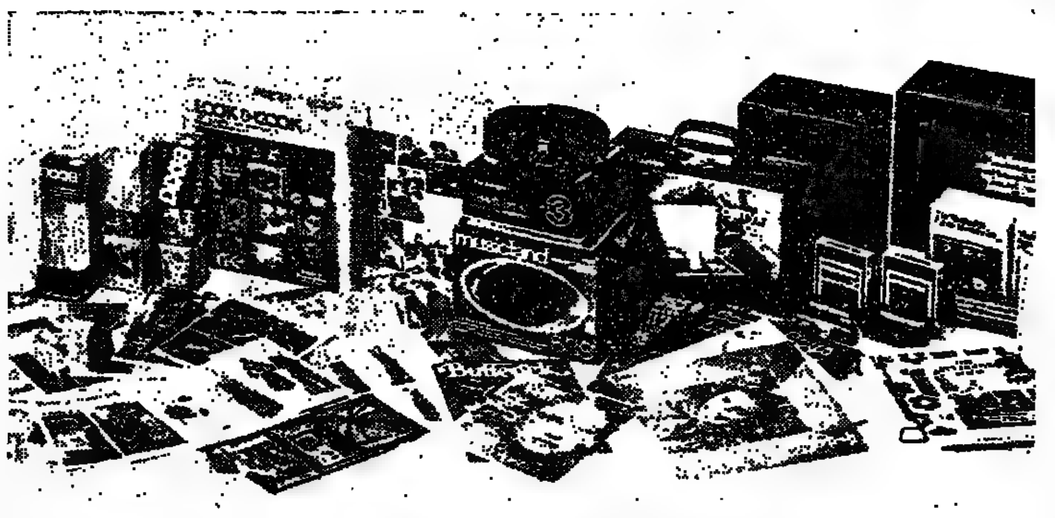
Paramount Pictures is thriving under Gulf & Western, but Dot—which proved unprofitable—was long since sold to the television-network ABC, another entertainment conglomerate lured by the siren sound of music. With its network ratings dominating television, ABC had some justification for assuming it knew consumer tastes. But earlier this year it too gave up and sold its record company to yet another entertainment company, MCA, which was willing to try its hand at mining the rich vein of musical gold.

The roller coaster of pop music would seem to be particularly far from the corporate concerns of the American Can Company—64th in the Fortune 500 directory—which for many years dominated the canning business. But since a disastrous year in 1971, when profits slumped by 22 per cent, American Can has singlemindedly pursued a goal written in bold type in the new annual report: "Our objective has been to position ourselves in an expanding number of high-growth consumer markets." To emphasise the point, the report itself is entitled American Can and Tomorrow's Consumer."

So far the strategy has paid off handsomely, with earnings last year of $119.9m, or $6.05 a share, compared with $5.48 a share in 1977, a gain of 10.4 per cent. Since 1971, the growth in earnings per share has been 150 per cent, despite a 25 per cent decline in the volume of the metal can business. Over the same period the company's total sales revenue has increased by over 110 per cent to $3.98bn.

The major acquisition in its diversification drive—in sales terms—has been Pickwick International, the largest wholesaler of records in the United States, which also owns several labels of its own. Bought in April, 1977, for $102m in cash, Pickwick has grown from a volume of $260m in the year before the acquisition to $½bn today. Pickwick handles one out of every five records bought in the U.S., claims Lionel Sterling, senior vice-president of American Can and chairman of Pickwick.

Part of that growth has come through acquisitions, including the 28-store Sam Goody retail chain, where—the youthful 41-year-old Sterling admits with a smile—he was a 15-year-old stockboy in the original Sam Goody store in New York.


Pickwick International has given American Can a strong position in the record market and an entry into many other consumer markets as this display illustrates.

In managing to get into the record business as a wholesaler, without worrying about what particular record is top of the pops, American Can is following the consistent pattern it established over 10 years ago. Its other consumer products now include such staples as Dixie Cups (paper cups), toilet paper and plastic spoons. The company buys more Paris fashions than anyone else, mass producing them as patterns for women to sew at home.

American Can dominated the tinning business from the beginning of the century, when the company was founded as a monopolistic amalgam of over a hundred canning firms. But it gradually relinquished primacy in the field to Continental Group (formerly Continental Can); now instead it concentrates on specialised packaging (by no means just can), where the profits are greater and the technology more advanced. Since 1972, 88 plants have been shut down and though another 45 were opened, "we've been shutting down horse-size and opening up rabbit-size," according to William Woodside, president of American Can.

In the music business, American Can has entered a field still largely dominated by entrepreneurs, especially in retailing and wholesaling. The biggest retail chains account for less than 10 per cent of the country's 11,000 retailers.

At one end, American Can has consolidated Pickwick operations in a 41,000-square foot headquarters in Minnesota where 32 articulated lorries can unload indoors simultaneously. At the other, it has increased the number of its retail stores by more than 50 in the two years it has owned Pickwick.

Another 75 are on the drawing board, reflecting a trend in the music industry away from middle men such as rack jobbers. When American Can bought Pickwick, 80 per cent of Pickwick's business was in rack jobbing where it supplied the record departments of retail giants like Sears and Woolworth's.

Since Pickwick's retail stores are concentrated in the same shopping malls that accommodate major retailers like Sears which also sell records distributed by Pickwick, a potential conflict exists. According to Chuck Smith, the president of Pickwick and its chief operating officer, the presence of both is actually good for business. "Stores of various configurations appeal to different market segments."

Handling some 20 per cent of all records distributed in the U.S., and part of a corporation which is bigger than the entire country's music business, Pickwick has aroused some suspicion—and even hostility—for its size and continued growth. But Lionel Sterling stoutly defends the company's presence in the music business. He sees the parent company's role as that of a management consultant for its subsidiary.

In this way American Can has helped establish a new division, Information Systems and Services, which will allow computers to make Pickwick's retail outlets, both in rack operations or their own stores. The computer will process information about an impending rock concert in one city and the request for one record in another. Any customer request should be filled within a day.

Incentive schemes for employees have also been introduced, along with five-year strategy planning under the direction of a recruit from the accounting firm of Coopers and Lybrand.

Consolidating Pickwick headquarters in Minnesota broke a pattern that reflected the company's disparate origins: a large budget label run from New York, a wholesaler in Minnesota, and various retail chains that were acquired along the way. American Can increased the size of the headquarters and also added other regional outlets, which now number 17.

The acquisition of a west coast distributor, MS Distributors, led to a boycott from retailers who did not want to be supplied by a competing retailer. The boycott continues with one 23-store chain called Tower Records, but has had little impact on Pickwick or the attitudes of other retailers.

In its manufacturing operations, Pickwick has continued to expand its repertoire of budget material. Recently Czechoslovakia's *Supraphon* Records was licensed by Pickwick for its classical "Quintessence" line. The Pickwick record line itself now constitutes only 10 per cent of its business.

American Can has not quite escaped the vicissitudes of the record business, despite its handling all companies' records. As the country's largest regional distributor of independent labels, Pickwick lost the franchises to distribute A and M and ABC Records, which ceased being independently distributed in January. Pickwick will continue to handle those records, but not under the advantageous terms of a distributor, a change that Lionel Sterling calls "insignificant" in budgetary terms. Though A and M and ABC were two of the largest independently distributed companies, Sterling considers independent distribution still viable and an important service Pickwick provides for the smaller companies that were the backbone of the record business in the 1960s and 70s.

For the future, Pickwick will continue to adjust its operations to meet consumer demands. Long-term projections foresee a greater demand for hardware, both in audio equipment and the home computers that will provide future home-entertainment centres. Pickwick retail stores will begin to carry the computers and other new technology like video discs and tapes. American Can's most recent acquisition, the direct mail-order house of Fingerhut, will help Pickwick enter the mail-order record business, which represents 14 per cent of all record sales and yet has only one major broad-based supplier in CBS Records.

Expansion potential also exists in Europe, using the British operation under Monte Lewis as a base. While the major manufacturers provide their own direct distribution channels, Pickwick International does have a fleet of Mercedes lorries, each stocked with 10,000 records for supplying about 9,000 British retailers. Pickwick's budget label controls 60 per cent of the British budget market, which itself is 12 per cent of the British record market. Attracted by the growth rate of 13 per cent in European record sales, Pickwick International expects to move across the Channel in the manufacturing business, if not distribution as well.

Should it reproduce its performance in the U.S. and Britain, Pickwick will soon have a profitable, if not fashionable, music business on the Continent as well.

EXECUTIVE HEALTH

BY DR. DAVID CARRICK

Ailments of the fanciful variety


IONICUS

I WONDER how much it cost the Government (which means us) to carry out the "General Household Survey 1977," the results of which were published recently? The report arrived at the astonishing conclusion that over 50 per cent of all men questioned and no fewer than seven out of 10 of the women had (or more likely fancied they had) some chronic illness or other.

As the results took two years to produce, I imagine that the sum involved was considerable and possibly could have been devoted to some more worthy cause. The result was all so very predictable. Startled as the surveyors in their naivety may have been, anyone with the slightest knowledge of people and history could have supplied guestimated figures free of charge. And those figures would not have been so very far out because man and his ailments, fancied or otherwise, have changed but little during the entire period of recorded history.

Plato in 380 BC, doubtless worrying about what the year 379 would have in store for him, was well acquainted with human frailties, for he wrote: ". . . a man is always fancying that he is being made ill, and is in constant anxiety about the state of his body," the great philosopher having in mind, no doubt, the dangers of air pollution caused by the smog arising from the many charcoal-burners on the outskirts of Athens.

The great English physician, William Heberden, whose long life all but spanned the whole of the 18th century, wrote with similar feeling about hypochondriacal complaints, stating that they: "resemble the gout, and madness, and consumption, in their not appearing before the age of puberty." Although a somewhat sweeping and not entirely accurate claim, Heberden may well have been feeling irritated by the large number of wealthy valetudinarians (Dr. Johnson included) who spent much of their time moaning about their illnesses in the coffee-houses of London.

These views were supported by a less eminent colleague, Dr. Buchan, a general practitioner, who wrote in 1760 that hypochondria: "generally attacks the indolent, the luxurious, the unfortunate and the studious," adding that the disorder "becomes daily more common in this country, owing, no doubt, to the increase of luxury and sedentary employments." He might have taken part in that recent survey!

But there are two differences in these modern days. Firstly, surveyors cover all social classes (unlike those quoted above) and, secondly, executives and their helpers—a group I call the crushed commuter class—did not really exist as such in the long ago. By the late 19th century, however, they most certainly did, and it was to them that the advertiser of patent medicines which claimed to cure anything from piles to psittacosis, aimed his words, because anyone stuck in a railway carriage or horse-drawn bus, could not fail to dwell upon the legends intended to influence him and charm the sovereigns from his pockets.

The "General Household Survey, 1977" did show, however, that chronic illness (or did they mean absence?) is much less common in professional people than in unskilled workers.

Agreed, and I would like to pay tribute to the fortitude and remarkable devotion to duty that is shown by 90 per cent of office-workers, of all ranks, who manage to struggle on in a most admirable fashion in the face of considerable adversity.

In a recent radio interview, I was asked questions about this, but I was a little bothered by the interviewer's query: "What would you do if an exec. (sic.) came into your consulting room and asked you to pronounce him fit?" As such a thing had never happened to me, I fought off a seemingly impossible question; but I wish that it had been asked just one day later because I saw a most healthy man who almost fitted this bill. He had no money troubles; there were no domestic problems: and he enjoyed his work very much: yet he was worried. And it was his disbelief in his good fortune that bothered him because, as he said, "I've never had a day's illness in my life. Surely at 50 I should have something wrong with me?"

As far as I could make out, he was suffering from cherophobia—the fear of being happy. But I must admit that he has got me worried.

Is anybody still there?

IS absenteeism a problem in your company? Do you even know whether it is a problem? Because absence from work is less immediate than an industrial dispute it attracts less management attention, yet it may account for considerably more time off warns the latest British Institute of Management checklist.*

"Managers should recognise that effective management control can affect absence levels. They should find out the conditions that cause absence, where it occurs and which individuals are involved. To do this it is essential that systematic records are maintained," it says.

It adds that there is evidence many employers do not see absenteeism as a problem, but this may be because they are ignorant of the true situation in the company and of comparable levels outside. Alternatively there may be an administrative failure to differentiate between genuine and improperly accounted reasons for absence, it says.

** Controlling Absenteeism, BIM Checklist No 80 from BIM Publications Sales Department, Management House, Parker Street, London, WC2B 5PT. 75p (50p to members).*

Business courses

Managing Maintenance Work (an advanced course), Colchester, Essex. July 23-27. Fee: £385 (inclusive). Details from Management in Action, 121 St. James's Drive, Wandsworth Common, London SW17 7RP.

Aviation Insurance Briefing, 1979, London. July 5. Fee: £85 (plus VAT). Details from Risk Research Group, Bridge House, 181 Queen Victoria Street, London EC4V 4DD.

International Program for Senior Executives, Geneva. August 27-31. Fee: SFr 5,500. Details from The Admissions Secretary, Centre d'Etudes Industrielles, 4 chemin de Conches, CH-1231 Geneva, Switzerland.

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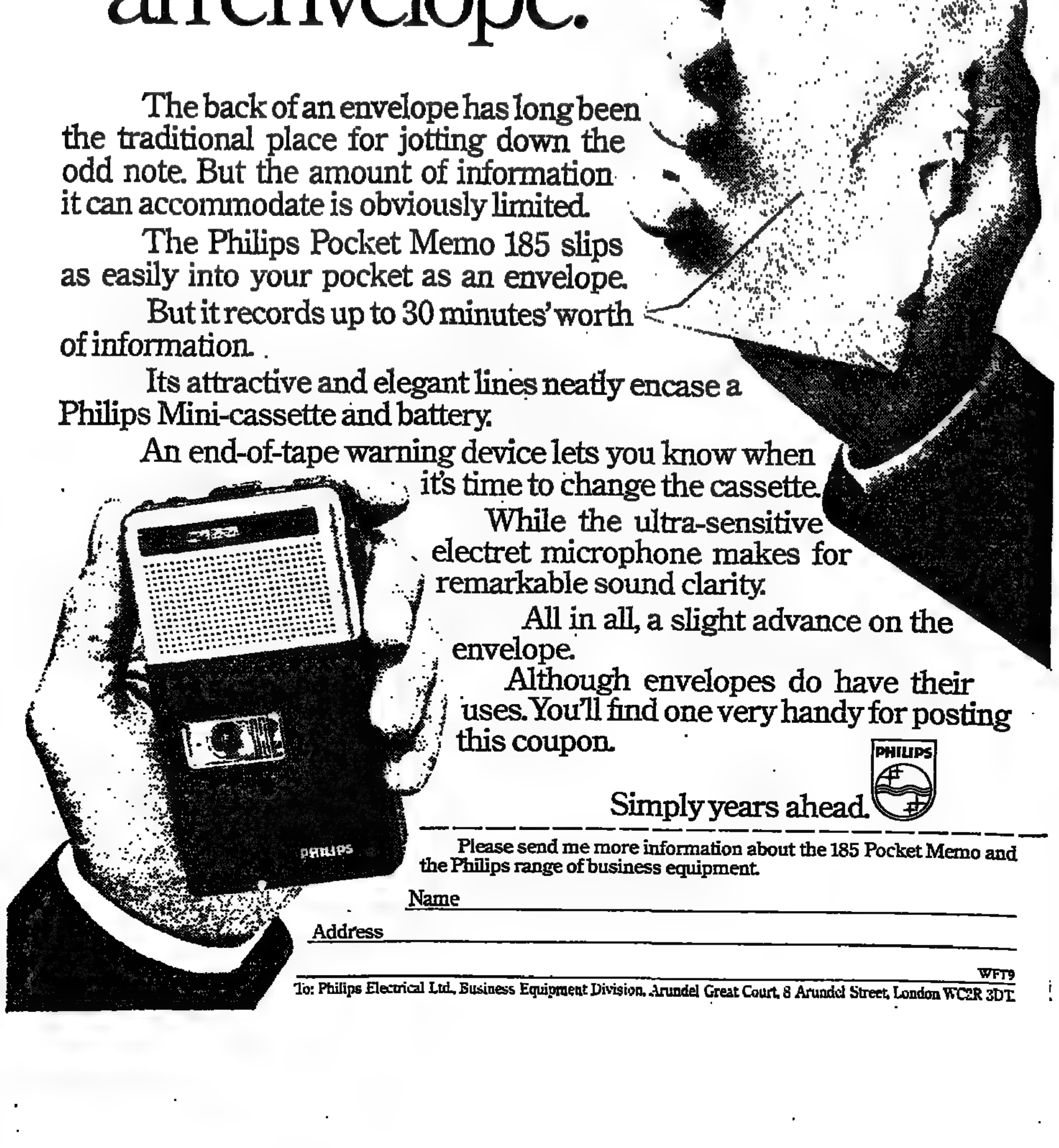

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The Economic Indicators
Speaker: Michael Shanks
Chairman, National Consumer Council

The Spirit of Free Enterprise
Speaker: Sir James Goldsmith
Chairman, Cavenham Group Ltd

Enterprise in a Mixed Economy
Speaker: The Rt Hon Sir Richard Marsh
Chairman, Newspaper Publishers Association

Developing a Competitive Strategy
Speaker: C. C. (Michael) Pocock
Chairman, Shell Transport and Trading Company Limited

Any Questions?
Chairman: David Jacobs
Panel: Sir Monty Finniston
Lord McCarthy
Sir Richard Marsh
Katherine Whitehorn

Wednesday 27 June

People and Performance
Speaker: Sir Hector Laing
Chairman, United Biscuits Ltd

Effective Performance – Structure and Attitudes
Speakers: Sir Harry Moore
Chairman and
Dr. A. Frankel, Chief Executive
Staveley Industries Limited

The Rt. Hon. Sir Keith Joseph, MP, Secretary of State for Industry, makes his first major speech to UK management on 27 June.

Thursday 28 June

The Fiesta Story
Speaker: Keith Prickett
Marketing Director
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Reality is the moment when one buys a BMW rather than a car.

Compromise, in automotive engineering, seems to be the rule rather than the exception. BMW regard this as unnecessary. As soon as one closely examines or drives a BMW one realises that it is the sense of balance, not compromise, that gives a BMW its unmistakable character.

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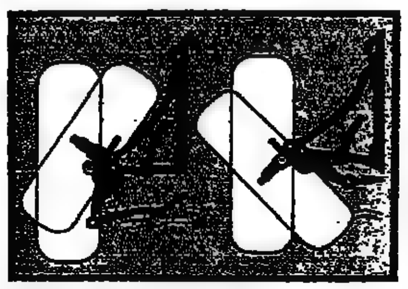
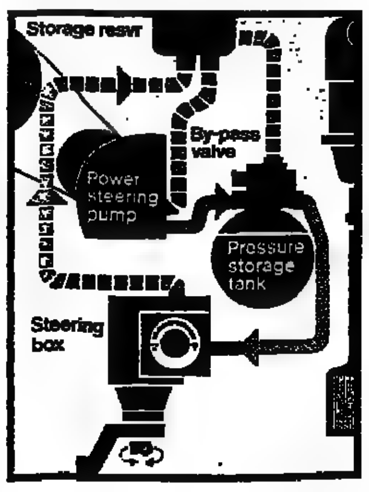


Double pivot front suspension.



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Monday June 4 1979

Time for U.S. leadership

THE U.S. has not faced up to the "long-term, chronic problem" of its excessive energy consumption. It will have to live with the prospect of shortages until it introduces policies "that will cut back demand, reduce waste and ensure maximum production at home."

Thus President Jimmy Carter last week. For two years now, the President and Mr. James Schlesinger, his Energy Secretary, have been urging Americans to face up to the coming energy crisis. They have failed. As of last week, three-quarters of the American public did not believe there was an energy crisis at all.

The events of the past six months have helped to turn the American oil crisis into a world oil crisis. But the start to any global solution still lies with the U.S. As the free world's largest consumer and largest importer, it has to give the lead.

Seriously in question

That leadership is now seriously in question. A weak and unpersuasive president is faced by a hostile and uncomprehending Congress. His original energy programme was picked over by every interest group that might have been hurt by it. More recently, the President's request for standby rationing powers was passed by the Senate only to be thrown out by the House of Representatives, a majority of whose members were worried at having to explain a vote for rationing to the voters back home.

Infuriate allies

Last week, the Carter administration itself moved to increase imports of heating oil into the U.S. in order to build up stocks for next winter. The immediate impact of this move has been to infuriate America's western allies, and to put a further squeeze on an already tight world supply and price situation.

Three elements have been running through U.S. energy policy over the past two years. First President Carter has been unable to impress the Congress. Secondly, there has been a distressing refusal by Americans to look at the effects of their actions on the rest of the world.

The third element confusing the whole U.S. debate is the old canard of the major oil companies. At present, Americans pay very low prices for their oil. The most obvious solution to the American oil crisis would be to deregulate domestically produced oil prices immediately, and to combine this move with a tax on windfall profits. At one stroke, demand would be cut back and the oil companies would still have the cash and the incentives to find more U.S. oil.

A deregulation of prices is the solution favoured by the oil companies. But America has a long tradition of looking on "big oil" with deep distrust. Besides, the effect of such a sudden move would be uneven across the country, and would in some cases hit hardest at the poor and the old. In the current mod of America, it will not happen.

Instead, Congress is bogged down trying to decide how to limit profits that the oil companies could make from the present increases in prices. It is even threatening to try to block the very gradual process of bringing U.S. domestic crude prices up to world levels, which began to operate last week.

President Carter has now set out on yet another effort to persuade the American public and the Congress that oil consumption has to be cut. Based on his past performance, his chances of success cannot be rated highly.

If he fails, the potential consequences for the western world are gloomy. America will continue to suck in oil. The supply situation throughout the world is likely to tighten even further. If it does, the level of world inflation, the level of world growth and the level of world trade will all become increasingly dependent on the decisions of the OPEC countries' leaders. In the third world, the current accounts of the world's poor nations are likely to come under some very severe strains.

'Change your lifestyle'

It really ought not to need Sheikh Yamani to tell us that "unless you change your lifestyle in the West, and especially in the U.S., I'm afraid it will not be a recession, one day it will be a deep depression."

The immediate issue is a relatively straightforward one. The free world faces a serious crisis. It looks to the U.S. for leadership. The time to exercise that leadership is now.

Conference kettle subsidised pot

THE BRITISH Government's strong rebuke of the U.S. authorities over a grand jury decision to indict criminally seven transatlantic shipping groups is understandable and will no doubt be echoed by other governments with strong maritime interests from Stockholm to Tokyo.

The indictment is, at its simplest level, another example of the U.S. applying its anti-trust laws to companies and individuals whose trading base is in a country where those laws do not apply.

In terms of the shipping industry, however, the issue is more complex and more important, especially at a time when the UNCTAD conference in Manila has again illustrated the pressure which exists in the developing world against the way that the developed countries run their shipping affairs.

The latest row with the U.S. authorities is over the degree to which shipping lines should be allowed to operate strong conferences to fix cargo rates, determine levels of service and apportion investment in new ships.

European shipowners say that without such conferences, which are legal outside the U.S., services would be less reliable and, because they would use ships less intensively, more costly. The Americans argue that if conferences become too strong, monopolistic powers produce higher prices, there is a risk of excessive profit and restriction of enterprise.

In the grand jury case, the shipping groups investigated (four of which are American) were accused of failing to provide the U.S. authorities with full information on conference price-fixing activities.

Basis of negotiation

There are some identifiable rights and wrongs involved. It appears reasonable that shipping lines should co-operate on pricing and investment in the interests of efficiency so long as those arrangements are open to external scrutiny. European shipowners do not like the idea of such government scrutiny, but if pushed would probably agree that it is a price worth paying for stability on the Atlantic and Pacific Oceans. This should be the basis of future negotiation on the question.

The Europeans, however, are quite justified in arguing that the U.S. maritime authorities, in their present condition, are not fit to provide such scrutiny. In recent years, decisions from the Federal Maritime Commission have taken many months inhibiting commercial manoeuvre. Meanwhile, much effort has been dissipated in the internecine struggle for influence in maritime affairs between the State Department, the FMC, the Department of Transport and the Justice Department.

This was the reason why one year ago President Carter appointed a task force to review the tangle. A shipping policy initiative was promised for the early part of this year, but has not materialised, chiefly because the task force failed to find compromises in crucial areas.

Meanwhile, UNCTAD is ploughing successfully down the path of dividing the world's sea trade into nationalistically denominated shares, first for regular cargo liner services, later perhaps for bulk trades.

Self-contradictory

It is bad for the vested interests of the established maritime powers that political decisions should deprive them of business. But it is also questionable whether the world can afford to dispense with the expertise of established operators or whether it is in the interests of a developing country to channel limited resources on such a capital intensive industry as shipping.

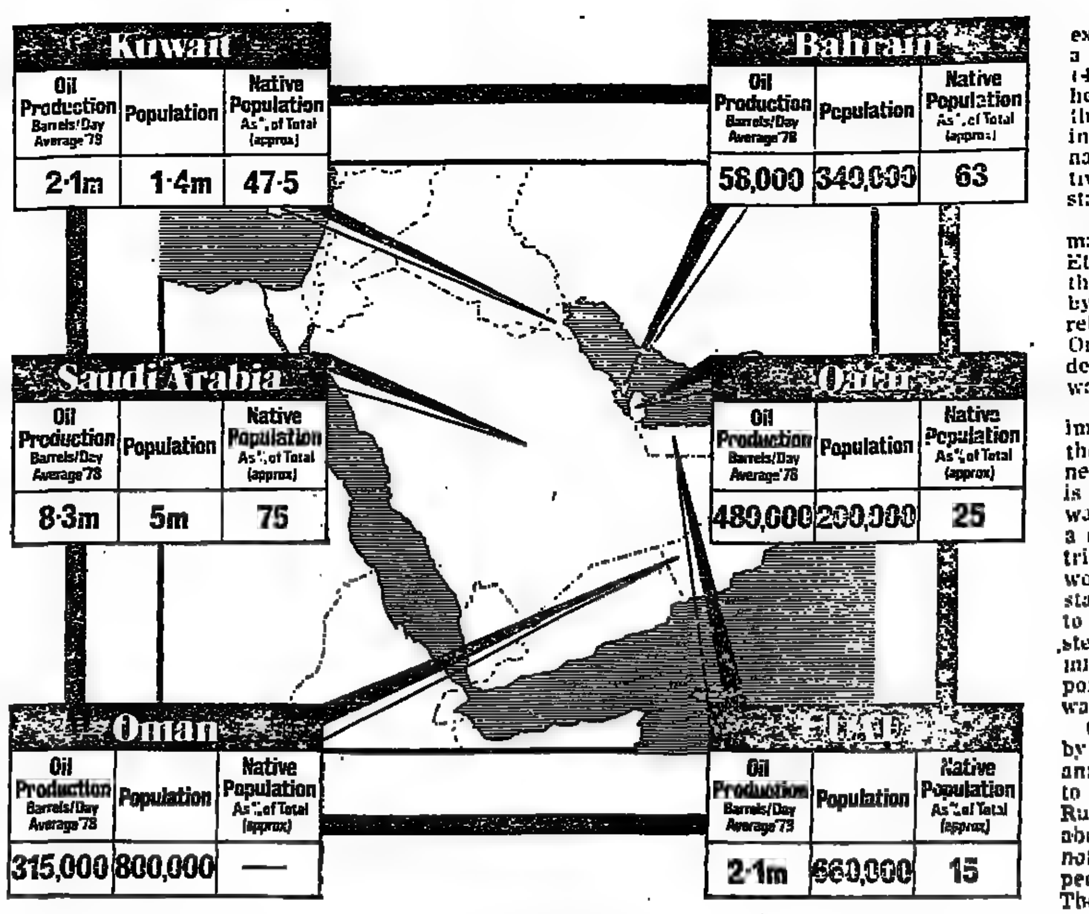
The sad fact is that shipping has become a cauldron of rival political and industrial dogma, whether it be over anti-trust, conferences or flags of convenience, at a time when most ship owners are at their lowest pitch of financial fortune for 40 years.

The developed world, in a forum like UNCTAD, has to try to convince the Group of 77 to tread softly in overturning well-tried structures, but finds its arguments weakened by the self-contradictory and pragmatic stances evident within its ranks. There is no more obvious example of this than the loud U.S. opposition to the liner cargo-sharing code at a time when the U.S. shipping industry is bolstered by subsidies and protected by the Jones Act.

No country can claim purity of principle in shipping law, but there is clearly an urgent need to pursue with determination international solutions to these and many other problems.

Some clouds gathering over the Gulf

BY ALAIN CASS



Kuwait

Oil Production Barrels/Day Average '78	Population	Native Population As % of Total (approx)
2·1m	1·4m	47·5

Bahrain

Oil Production Barrels/Day Average '78	Population	Native Population As % of Total (approx)
58,000	340,000	63

Saudi Arabia

Oil Production Barrels/Day Average '78	Population	Native Population As % of Total (approx)
8·3m	5m	75

Qatar

Oil Production Barrels/Day Average '78	Population	Native Population As % of Total (approx)
480,000	200,000	25

Oman

Oil Production Barrels/Day Average '78	Population	Native Population As % of Total (approx)
315,000	800,000	—

U.A.E.

Oil Production Barrels/Day Average '78	Population	Native Population As % of Total (approx)
2·1m	660,000	15

THE U.S. and the backers of its policies in the Middle East seem set on a collision course with their traditional allies in the area. These allies are the oil producers who between them account for more than one-third of OPEC production and upon them the economies of the industrialised world depend.

It now seems clear that for all the desperate efforts to paper over the cracks, relations between Washington, Kuwait, and the lower Gulf States, with the exception of Oman, are at an all-time low. And despite Thursday's indication by Saudi Arabia that it may raise oil production in an effort to stabilise world oil prices, during the turbulent past few months it has appeared ready to unsheath the oil weapon—not to use it offensively, which would be unthinkable, but for its own protection.

Sheikh Ahmed Zaki Yamani, Saudi Arabia's oil minister, came as close as he decently could to saying as much in an interview in Washington. The fact that the kingdom has been limiting its production to 8.5m barrels daily while at the same time cutting the amount of crude available to the oil majors—and therefore to their major customers in the West—is at best a worrying sign of the times and at worst an oblique signal of political annoyance.

The oil Sheikhs are almost uniformly hostile to the peace treaty between Egypt and Israel, angry with Washington for ignoring their warnings, and puzzled that so little effort was made to win them over or to understand the extreme vulnerability of their present position.

Part of the problem has been that the Gulf Arab, a reticent sometimes aloof bedouin, is given to excessive politeness. But that is only part of the reason why the U.S.—having failed to foresee the Iranian upheaval—now appears to have incorrectly judged the mood of Saudi Arabia and the Gulf.

The major problem may have been a strong element of wishful thinking both in Washington and elsewhere. Because the Saudis and the other oil Sheikhs are deeply conservative; because they fear Soviet intentions in the Gulf; because they would like to be rid of the Palestinians; because their own economies are now inextricably linked to those of the West and to force a recession in the West could eventually endanger their own positions it was thought that they would swallow a unilateral deal between Egypt and Israel. This line of argument, if it ever was valid, only made sense as a pillar of western policy towards the Gulf before the revolution in Iran which swept away the Shah in a display of violent radicalism watched with horror in the Arab oil states.

The revolution in Iran and the Camp David peace treaty have, in the words of a senior member of one of the area's most distinguished ruling families "changed everything." They have come as hammer-blows to the oil Sheiks who are deeply suspicious of change, and have done their best to keep well out of the firing line of the Middle East controversy.

Revolution is not yet upon the Gulf. But the ruling families are no longer confident of their ability to buy off trouble in the future. The survival of the Sheikhs and the Emires is not yet at stake. But *it has become a live issue.*

The concern about stability in the Gulf following the revolution in Iran was matched, according to bankers, by a "veritable avalanche" of funds leaving Saudi Arabia and correspondingly large outflows from Kuwait and the lower Gulf.

One banker claimed that, in the space of a month, three Kuwaiti families invested $100m abroad in real estate. The exodus has since slowed but is still running at a high level partly because of the strength of the dollar and of sterling.

The continued unrest in Iran is deeply troubling to the Arab regimes of the Gulf. Some believe that Iran—like Iraq before it—may take years, possibly decades to stabilise. The latest fighting around the major Gulf port of Khorramshahr between Iran's discontented Arab minority and what passes for the country's central government must reinforce that impression.

For Saudi Arabia, Kuwait, the United Arab Emirates, Qatar and Bahrain—though not Oman where the issue is of a different order—the major problem has been how to cope with the consequences of unprecedented rates of economic growth, avoiding the social and political dislocation it caused in Iran.

The boom years of 1974-76 are over. A combination of soaring inflation rates, major dislocations of ports and road transport, the virtual collapse of the building industry in some countries, the erosion of their purchasing power due to the decline of the dollar and intense political pressure to conserve their only natural asset has forced a radical reassessment of how fast the Gulf States should generate and spend their oil money.

It would be a mistake to speak of a recession in an area which could still muster a collective revenue of over $50bn in 1978. The Gulf is still a major growth area and a market of pivotal importance for exporters.

But the pace has slowed down dramatically. The Saudis have declared what virtually amounts to a moratorium on the award of big contracts following the completion of most major projects in the second Five-Year Plan. Kuwait is seriously looking at ways of cutting expenditure, partly in order to reduce its 500,000-strong expatriate labour force which it sees as a potential threat to stability in the country.

Building activity in the UAE has all but collapsed. Hotels are barely half full. There are reliably said to be fewer than 900 construction companies left in operation against 2,500 in the boom years. Dubai is barely recovering from a banking crisis which seriously shook confidence in its role as a service centre.

Qatar remains profoundly cautious and is unlikely to rush into a decision to develop its monster West Dome natural gas field. In Bahrain the growth of offshore banking units has levelled off and the economy shows little sign of picking up before the construction starts on the $1bn causeway to Saudi Arabia.

Corruption and economic mismanagement which were major issues in Iran have become live topics. The almost complete absence of a regional development policy, of any attempt to co-ordinate industrial projects or identify markets has focused criticism on the petty, tribal jealousies which so often dictate major decisions of the ruling oligarchies.

Why did Dubai build the world's biggest dry dock when Bahrain already has one? Why will the UAE soon have five international airports? Why has Sheikh Rashid insisted on proceeding with the construction of Jebel Ali the 66-berth port which, like the Dubai dry dock, looked like being a white elephant before it left the drawing board?

For how long can Sheikh Rashid persist in running his emirate and dispose of its $3bn annual income as if Dubai were a family concern?

Some Gulf countries have been more successful than others in satisfying the expectations generated by oil, and are consequently less vulnerable to internal upheaval. Kuwait, with the highest per capita income in the world, is probably the best example. Others, such as Saudi Arabia, have tradition and tribal cohesion as well as a subtle balance of political forces and the apparatus of a police state to protect the rulers.

But the need for internal change to meet the challenges of the political awakening which followed the Ayatollah's Iranian revolution is increasing. The pressure on Kuwait and Bahrain to reinstate their suspended parliaments will grow. Persuasion by the Saudis, who would see this as an eventual threat to the legitimacy of their own ruling family, may delay moves towards a form of democracy but not indefinitely.

The huge number of expatriates in the Gulf also is a worry. Many are Palestinians (400,000 in Kuwait alone)—hence Kuwait's stand against the peace treaty. Others are increasingly frustrated by nationality laws which effectively relegate them to the status of second-class citizens.

Russian intentions are a major concern. Having won over Ethiopia and South Yemen, will the Kremlin now threaten Oman by rekindling the Dhofari rebellion which the Sultan of Oman, the British and the Shah defeated only after a prolonged war of attrition?

The question is of vital importance to the West since the Musandem Peninsula at the neck of the straits of Hormuz is owned by the Sultan and watches over some 100 tankers a day carrying oil to the industrialised world. The U.S. is worried enough to have stationed a fleet off Oman and to be seriously thinking of stepping in with substantial military aid if Britain's support of Sultan Qaboos should waver.

One Kuwait minister reacted by saying: "Frankly, this annoys me. Who are they going to protect us against? The Russians? Then we are talking about a major war, which is *not* reassuring. Our own people? We are in their hands. The Americans should understand that we cannot afford their open support after what happened in Iran."

It is hardly surprising that against this turbulent and confused background the Gulf states, which now regard overt U.S. support as a political liability, are unwilling to help the West out of its energy predicament.

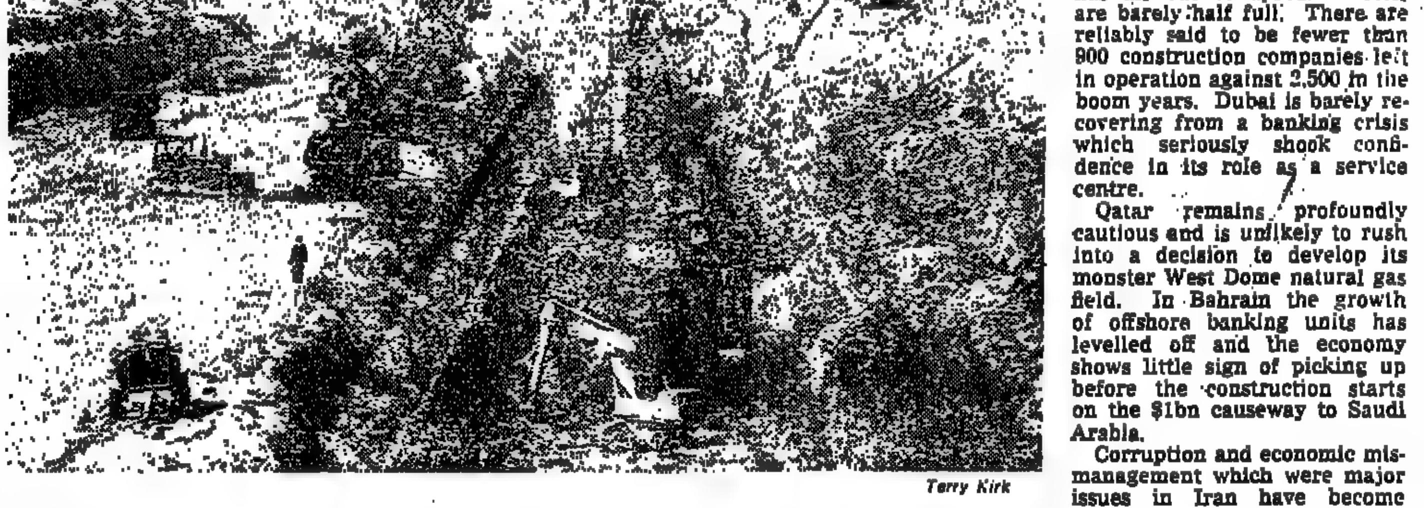
The major question is how far they are willing to risk their own interests by forcing up the price of oil or limiting production, or both.

The ruling families are all deeply conscious that, in the final analysis, their own survival depends on the economic stability of the West. They have not forgotten that the oil embargo of 1973 and the quadrupling of oil prices which followed was a major shock to the economies of the industrialised world and that the reverberations were felt in the Gulf.

The need now is for a new balance in the relationship between the West and its natural allies in the Middle East which gives the Gulf stability and the West sufficient oil. It involves, among other things, a reassessment of U.S. Middle East policy, an urgent need to tackle the Palestinian problem and a Gulf Security pact.

The third element of a new relationship between the West and the oil producers would be an effective set of energy conservation measures which would give Saudi Arabia, for one, the political excuse to maintain high production levels.

It is unlikely that any of this can be done in time to make any difference at the next OPEC meeting in June. But it is something the leaders meeting in Tokyo at the world summit should reflect on.


Terry Kirk

Dubai's Jebel Ali port—white elephant before it left the drawing board?

MEN AND MATTERS

Out-of-court Jay stays put

Peter Jay, the outgoing British Ambassador to Washington, is not going far—he is moving about a mile up the road from the embassy on Massachussets Avenue, where he will be settling down to work on his *magnum opus* on global market socialism.

Jay has always said that, once the diplomatic posting was over, he wanted to write his book. The main question has been where and under whose auspices. It seems he has now received a grant from an American Institution (probably the German Marshall Fund) and been offered office space at Brookings, the great American think tank.

Some students of diplomatic form point out sniffily that it is "irregular" for a former ambassador to remain in the city of his posting. Such niceties are, however, unlikely to worry either the Jays or Sir Nico Henderson, the new man (who appears to have got his own shorter opus out of the way).

I gather Jay's main regret at leaving the embassy is the loss of his automatic right to use the tennis court. It means that, like the rest of tennis-mad Washington, he will have to queue and wait for court space with everyone else.

Last exposure

Having closed the bars and nightclubs, Iran's new Islamic government is now shutting another door on western decadence. Air France air-hostesses, almost the only women staying at the Tehran Intercontinental, are no longer being allowed to flaunt their bikini-clad figures around the hotel's swimming pool.

The pool has been closed after a series of incidents in which empty soft drink bottles were thrown from hotel windows at the hostesses. The hotel staff is seemingly very religious and viewed the sunbathing as an insult to their Islamic susceptibilities.

Jetting gadflies

With the annual meeting season under way, British managers may be grateful that they are spared the attentions of those who, in the U.S. are known as "corporate gadflies." One of the most active is Lewis D. Gilbert, who with his brother John J. Gilbert owns a wide portfolio of shares, and runs an organisation called Corporate Democracy Inc., "a not-for-profit corporation." It has democratically sent me a copy of its 39th annual report, from which I learn that it is devoted, among other things, to forcing companies to hold their meetings in accessible places.

In practice, this means travelling around the backwoods of America making speeches designed to flush out recalcitrant managements, which are numerous. One favourite backwater, for instance, is Flemington, New Jersey, a mere 50 miles from New York, but peculiarly inconvenient to get to—it is patronised by Exxon and Eastman Kodak. Coca-Cola, and a host of others, prefer the scenery in Wilmington, Delaware.

Such attempts—as the Gilberts see it—to evade the participation of the shareholders, do nothing to deter Louis D. Gilbert, who searches out the most obscure hidey-holes and can make up to half a dozen speeches without once letting a trace of humour divert him from his course.

"We are like ombudsmen," he tells me from his office on Park Avenue, New York. "We are doing what the unit trusts should be doing and don't. . . No, no, we are delighted to be called gadflies. Socrates was described as a gadfly. We like the word." There are, he says, about a dozen full-time gadflies in the U.S.

Another of them, a very different character, is Mrs. Evelyn Y. Davis of Washington, who is flamboyant, attractive, and sharp-tongued. She makes a habit of addressing chairmen by their first names and complementing them on their looks, and last hit the news at the recent annual Ford meeting, where she proposed that there should be more members of the Ford family on the board. Henry Ford himself slapped her down.

Neither type of gadfly is very popular in corporate boardrooms: the Institute of Investor Relations Managers holds training courses on how to deal with them.

Heavenly music

Solar energy may be moving rather sluggishly towards solving the world's energy woes—but a Hollywood, California, company is cashing in at a modest commercial level. William Lamb and Earl Turner, proprietors of the Solar Music Co., are selling musical boxes driven by sunshine.

They have set a silicon cell into the top of a clear plastic box containing a tiny electrically-driven music-maker. Given continuous sun — and even slightly overcast skies — solar music pours forth all day.

What about the tunes? Lamb and Turner have picked "Beautiful dreamer," "It's a small world," and, of course, "You are my sunshine."

There are som consolations in the British climate, it seems.

Fading fables

Somerset Maugham, who once wrote that Raffles in Singapore "stands for all the fables of the exotic East," would be disheartened to learn that the elegant old hotel is soon to be dwarfed by a massive development project. It includes a 66-storey hotel and a 42-storey office block. Raffles City, dubbed a city-within-a-city, will sit largely on the former site of Singapore's oldest school, Raffles Institution, which despite being the alma mater of many eminent Singaporeans, was flattened to make way for the new concrete mass.

So far Raffles has been spared, but its Achilles heel is that it stands on prime land which it does not own—the site belongs principally to the (semi-government-owned) Development Bank of Singapore which is financing Raffles City.

Light relief

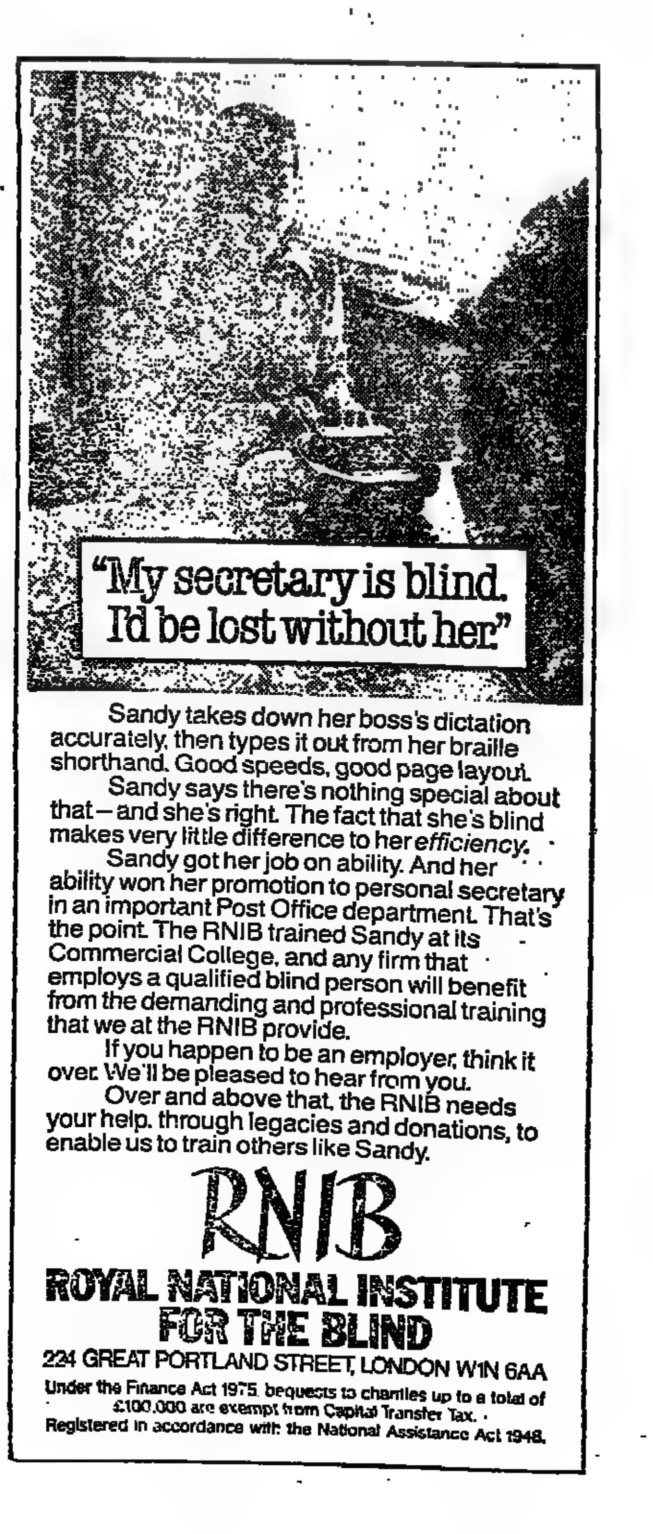
It might sound like an ominous hiss in the background: the company which opportunistically started making gas lamps during the 1974 three-day week is continuing to prosper. Having cornered the nostalgia market (prinicipally pubs, but also some streetlighting and historic buildings) Sugg Gas Lighting Equipment of Crawley is once more emphasising the practicality of gas.

It is, for instance, having talks with the authorities in Barbados about tapping local gas discoveries for lighting, and more surprisingly sold £3,000 worth of lamps to New Zealand Railways for use on trains. Inquiries from householders are beginnin gto come in again too, I gather, despite the cost of converting from electricity. "It may be remembered," said a spokesman wrily, "that in times gone by, one third of the heating would often be derived from the lighting."

Unsuitable case

The decline of the National Health Service has ceased to shock me, but things have gone further than I thought. According to the Civil Service union magazine Red Tape as official's report on a social security claimant in Carlisle mentioned in passing that "claimant had been admitted to hospital but was discharged immediately because of illness."

Observer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مكبر من الأصل

FINANCIAL TIMES SURVEY

Aerospace

The world's aerospace industries go to this week's Paris International Air Show at Le Bourget on a buoyant tide of civil and military business that is expected to add more than £300bn to order books during the next decade.

Expansion ahead despite problems

By Michael Donne

Aerospace Correspondent

EVERY AERONAUTICAL market throughout the world is now expanding. In civil aviation, the growing demand for air travel, stimulated both by cheaper fares in many areas and increasing recognition in developing countries of the way in which aviation can promote economic growth is already resulting in an average annual rise of about 8 per cent in the number of passengers carried. This, in turn, coupled with the need to replace ageing fleets and to meet increasingly stringent Governmental noise regulations and soaring fuel bills, is resulting in a massive inflow of orders for new airliners—a "re-equipment tide" that began to flow early last year but which has quickened significantly in 1979 and is expected to continue until at least 1981. These developments are further spurring other expansionist trends—in the provision of new airports and all the associated ground systems that civil aviation requires.

The safety checks on the world's fleet of DC-10 jet airliners over the past week have been precautionary, following the crash in Chicago on May 25 of an American Airlines' aircraft. Although causing temporary disruption to some airline schedules, it is not expected that the DC-10's recent problems will affect this long-term re-equipment tide in civil aviation.

A recent detailed study prepared for the International Civil Aviation Organisation (ICAO, the aviation technical agency of the UN) by the U.S. firm of T. M. Abrams and Associates suggests that the total value of world civil aviation business through the period from 1979 to 1988 will amount to about $473bn, about £230bn.

This sum includes spending on new front-line transport aircraft of about £36bn, which is more conservative than some manufacturers' estimates, which put it at over £40bn for some 3,500 airliners of all kinds. But the ICAO study goes on to suggest that other areas of spending will include some £14.8bn on new "general aviation" aircraft, for the leisure, sporting, agricultural and business flying markets; £44bn on maintenance and parts for the scheduled airline industry; some £89bn on fuel; more than £6bn on new airport construction (again to some minds a particularly conservative figure); nearly £6bn on air traffic control systems; about £2.4bn on ground handling systems; about £700m on government- and airline-sponsored training programmes; nearly £9bn on "general aviation parts and maintenance"; and about £22.5bn on "general aviation" fuel.

The ICAO study suggests that the biggest single share of this outlay will be in North America, still the most active transport region of the world, accounting for 54.7 per cent of the total, with 12.2 per cent being spent in the Pacific/Asia region, 23.7 per cent in Western Europe, 4.9 per cent in Latin America and the Caribbean, 2.5 per cent in Africa and 2 per cent in the Middle East.

As with civil aviation, the military aircraft markets are likely to continue strong through the 1980s, notwithstanding difficulties in some countries which have already resulted in some cancelled orders, and political uncertainties in others. Estimates of future military business are more difficult to come by than in the civil arena, partly because of the sensitivities of the military market-place, and partly because of uncertainties over such developments as Strategic Arms Limitation (SALT), Mutual and Balanced Force Reductions (MBFR) and Comprehensive Nuclear Test Ban Treaties.

But the general belief among military aircraft manufacturers is that despite the shocks earlier this year over the cancellation of substantial Iranian orders for aircraft and missiles, and the loss of Egyptian orders for missiles, helicopters and other aircraft, there will be a heavy continued build-up of conventional military forces worldwide through the 1980s, stemming substantially from the West's response to the continued build-up of the Soviet Union's and Warsaw Pact's own conventional forces.

In terms of military aircraft, the best estimate is that business worth over £50bn for upwards of 5,000 new combat aircraft of all kinds is likely to be generated. Associated with this will be a continued strong sale of guided weapons and military avionics (airborne electronics), perhaps amounting to one-third to one-half as much again. On that basis, a military aircraft and weapons market of around £75bn does not seem unrealistic through to the end of the 1980s.

Just a bare handful of programmes will be contributing substantially to this. The Anglo-West German-Italian Tornado programme alone, for example, is expected to cost about £8bn for 809 aircraft through the 1980s, while other new programmes for aircraft such as the Jaguar-Harrier replacement could cost just as much. In the U.S., there are several new tactical aircraft programmes planned, including a new trainer for the U.S. Navy, which could run up to 1,000 aircraft or so, and a new Enhanced Tactical Fighter (ETF) to replace several existing ageing types, including the F-111.

If this military potential is added to that of the civil aviation side of the aerospace industry, an overall volume of business through the 1980s of over £300bn does not seem unrealistic. It could amount to much more, if other areas of activity are included, such as the burgeoning civil helicopter market and the increasing emphasis on space activities, especially the growth in the development of unmanned near-Earth orbiting satellites for direct applications of all kinds—weather forecasting, telecommunications, environmental control and earth-resources monitoring.

Spectrum

This business, of course, will be spread over a wide spectrum of other industries closely associated with aerospace — metallurgy, electronics, hydraulics, ceramics, glass, furnishing, civil engineering construction, architecture, and even consultancy work. But the figures, although only broad estimates, serve to show how aviation in all its forms has developed over the past thirty years, until today it is deeply enmeshed in the social and economic life of many countries, not as a luxury, but as an essential tool for progress.

But behind these potentially booming order books, there are problems. The rising cost of fuel is now a constant source of concern to airline managements. While it is not likely to affect the current re-equipment tide for new airlines—because of the sheer necessity to get rid of ageing, noisy and fuel-inefficient aircraft in favour of new ones that are quieter and burn up to 25-30 per cent less fuel per flight—it might force some constraints on airline expansion, especially through increases in air fares, with consequent effects upon revenues and profits in the mid to late 1980s. Fares rises

CONTINUED ON NEXT PAGE

CIVIL AVIATION 1979-88

Estimated world value ($m)

	N. America	Lat.-Am./ Carib.	Europe	Mid. East	Africa	Asia/Pac	Total
New Airline Transport Aircraft (units)	1.200	200	650	100	100	500	2.750
Percentage of Regional Share	43.7	7.3	23.6	3.6	3.6	18.2	100.0
New Airline Transport Aircraft Value	36.600	3,700	18,300	2,200	1,500	11,000	73.300
Percentage of Regional Share	50.0	5.0	25.0	3.0	2.0	15.0	100.0
Airline Maintenance/Parts Value	47,584	3,660	24.707	1,830	915	12,811	91.507
Percentage of Regional Share	52.0	4.0	27.0	2.0	1.0	14.0	100.0
Airline Fuel Value	93.338	7,321	51.244	2,745	1,830	26.537	183.015
Percentage of Regional Share	51.0	4.0	28.0	1.5	1.0	14.5	100.0
Airport Construction/Maintenance Value	6,324	677	2.444	493	1,869	724	12.531
Percentage of Regional Share	50.5	5.4	19.5	3.9	14.9	5.8	100.0
Airport Traffic Control Systems Value	5.699	806	2.873	460	719	956	11,513
Percentage of Regional Share	49.5	7.0	25.0	4.0	6.2	8.3	100.0
Airport Ground Handling Systems Value	2,567	207	1.348	125	289	279	4,815
Percentage of Regional Share	53.3	4.3	28.0	2.6	6.0	5.8	100.0
Government/Carrier Training Programmes Value	570	184	242	120	234	97	1,447
Percentage of Regional Share	39.4	12.7	16.7	8.3	16.2	6.7	100.0
New General Aviation Aircraft (units)	209.150	18,880	34.860	4,360	8.720	14.320	290,490
Percentage of Regional Share	72.0	6.5	12.0	1.5	3.0	5.0	100.0
New General Aviation Aircraft Value	21,424	2,143	3.367	612	1,224	1.836	30,606
Percentage of Regional Share	70.0	7.0	11.0	2.0	4.0	6.0	100.0
General Aviation Maintenance/Parts Value	13.178	1,007	2,250	275	640	950	18,300
Percentage of Regional Share	72.0	5.5	12.3	1.5	3.5	5.2	100.0
General Aviation Fuel Value	31,729	3.613	5.558	463	2,409	2,548	46.320
Percentage of Regional Share	68.5	7.8	12.0	1.0	5.2	5.5	100.0
Total Estimated Market Value (U.S.$)	259,013	23,318	112,333	9,323	11,629	57,738	473,354
Percentage of Regional Share of Total	54.7	4.9	23.7	2.0	2.5	12.2	100.0

Source: International Civil Aviation Organisation.

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Outlook for Britain

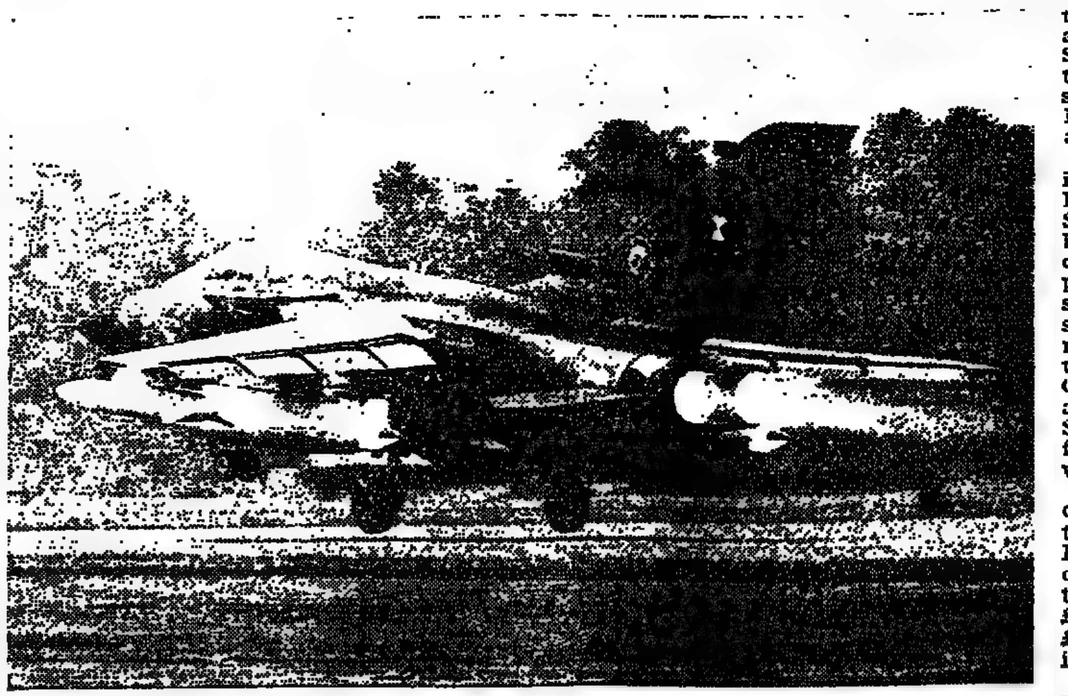
TOTAL SALES by the State-owned sector of the UK aerospace industry last year amounted to more than £1.7bn, with British Aerospace, the nationalised airframe manufacturer, achieving sales of £894m, of which £487m were exports, while Rolls-Royce, the State-owned engine manufacturer, achieved £763m, of which £341m were in exports. Short Brothers and Harland, also owned by the State, achieved sales of over £44m, of which exports accounted for £31m or more than two-thirds of turnover.

One of the major areas of concern over the next few months is likely to be the new Conservative Government's attitude to all these State-owned organisations. It has been indicated that some form of "denationalisation" is likely to be attempted, but in what way is not yet clear—either through partial dismemberment of the groups' such as selling off parts of British Aerospace, or offering some of the shares in these ventures to the public. If any changes have to be made (and many doubt the wisdom of this) the latter would clearly be preferred, as being less damaging to the morale and long-term interests of the industry.

For it is pointed out that the aerospace industry in the long term is still likely to need substantial sums of Government support for both new civil and military ventures, and the question is whether any would-be purchaser of any part of the industry would be prepared not only to find the initial purchase price but also the continuing heavy cash investment that would be required. The industry's own clear preference is now to be left alone to get on with the task of building aeroplanes in a period of intensifying world demand, with the minimum of further political interference.

In its first full year as a single trading organisation British Aerospace did well, with trading profits of £79m, or £4m above the level of 1977, on sales of £894m, up from £860m in the previous year, of which £487m were in exports. At the end of 1978, the forward order book was close to £3bn, of which 69 per cent was for export. The order book represented a rise of more than £650m over the previous year.

The group seems set for a continued period of prosperity, based on the programmes it has in hand in both civil, military and guided weapons and space activities, despite setbacks such as the loss of the Iranian order for Tracked Rapier missiles. Major programmes which seem likely to keep it busy include the manufacture of wings for the European A-300 and A-310 Airbuses, with an overall design consultancy role on both programmes, following the UK Government's decision to take a full 20 per cent stake in the European Airbus Industrie consortium. On the military side the biggest programme is the Anglo-West German-Italian Tornado Multi-Role Combat Aircraft, of which 809 are being progressively ordered through to the mid-to-late 1980s, at an overall programme cost to the three Governments of more than £8bn.


The Anglo-West German-Italian Tornado Multi-Role Combat Aircraft is now in full production, with an ultimate planned total of 809 aircraft. First deliveries are expected to be made next year from what is the biggest individual military aircraft programme to be undertaken in Western Europe since World War II

But there are other major ventures either already under way or in the pipeline. British Aerospace estimates that the total market for civil airliners in which it has some kind of interest (such as the BAe 146 je feeder-liner, the BAe 748 turbo-prop feeder-liner, the One-Eleven twin-engined jet, the A-300 and A-310 Airbuses, and the BAe 125 business jet and Jetstream 31 commuter-liner) could amount to some 5,400 aircraft by 1995, worth about £70bn. BAe will be aiming for a substantial share of this market.

Major

The A-300 and A-310 are dealt with fully elsewhere in this survey, but with orders and options already for over 340 aircraft, and likely to rise further, it is clear that BAe has a major wing production programme on hand for many years to come.

The BAe 146 is a project for a 70/100-seater feeder liner, which is being offered in both civil and military versions. Expected to cost about £250m to develop, this project is being pressed ahead, despite the lack of firm orders. But Lord Beswick, chairman of British Aerospace, has said that market response so far has been encouraging, and the group hopes to announce orders and options soon. These are unlikely to be big orders in terms of numbers, because the 146 is aimed at smaller operators with limited requirements. Rather, the order book is expected to be made up of a large number of small contracts world-wide. Furthermore, major interest is not expected to materialise until the aircraft has flown (in 1980) and can be demonstrated to potential customers.

The first prototype of the improved and re-engined Jetstream 31 commuter liner is expected to fly towards the end of 1979 from the group's Prestwick factory. Much interest has been shown in this twin-engined aircraft especially in the U.S., where the commuter-liner market is much more highly developed than in the UK and Western Europe, although there could be large markets there, too. In the military field, the Ministry of Defence could be interested in the Jetstream, for it has to replace ageing Pembroke, Dove and Heron aircraft now in service for communications and training and other duties.

The BAe 125 business pet is also a steady seller, with 435 aircraft sold to date, of which over half have been to North American buyers. To maintain the current sales success, BAe is considering a new 125 for the 1980s, with new engines (possibly the Rolls-Royce RB-401) and a new, improved wing.

The BAe 748 airliner is now in its 20th year of continuous production, and with more than 300 aircraft already in service, it is thought that further sales of 100 aircraft are likely over the years ahead, at a rate of more than one a month. The aircraft is available in three roles—civil airliner, military transport and maritime patrol, with the latter version under study by the French Navy.

Production of the One-Eleven twin-engined airliner continues at a slow rate, but negotiations are continuing with Romania for a co-production contract, on which general agreement has already been reached, involving up to 80 aircraft. This deal should ensure continued production of the One-Eleven through the 1980s, with progressive model improvements, to meet increasingly stringent Government noise regulations, and soaring civil aviation fuel bills.

The remaining major venture for the future is the prospective 130-160 seater and smaller 100-130 seater airliners, for which markets are expected to emerge in the 1980s. So far, it is not clear just what designs will emerge—one, or two—but what is clear is that if they do emerge in Europe, they will have to be internationally collaborative ventures, and this tends to indicate that Airbus Industrie might be the chosen organisation.

Airbus Industrie has conducted a number of studies under the broad title of the "Joint European Transport" programme, but the competition could be formidable, with the major U.S. manufacturers, and especially Boeing, almost certain to jump into any emerging market they see, with improvements to or derivatives of such models as the Boeing 737, 727 and McDonnell Douglas DC-9. Thus Europe will need to be finely tuned to the market requirements and prepared to move swiftly with a specific design if it is not to be left behind.

There is also the question of whether or not there will ever be a "second generation" supersonic airliner to succeed the Concorde, all of whose 16 authorised production aircraft have now been built and flown. It is unlikely that the UK and French Governments would be prepared to finance such a development on their own, and any new venture would almost certainly have to be tri-national, with the U.S. industry deeply involved.

There have been continuing technological studies of supersonic transport by the U.S. National Aeronautics and Space Administration, and by the individual major U.S. aerospace manufacturers, but so far no firm project has emerged, and there is some doubt as to when, if ever, it will, since currently the manufacturers have their hands full and their finances fully committed on the new generation of subsonic jets. But the pressures are there, and some time in the next few years it seems likely that this question will rise to the surface again, and some tri-national discussions will take place with a view to developing such an aircraft—perhaps fuelled by liquid hydrogen rather than fossil fuels—for the late 1990s or early 2000s.

The Dynamics Group of British Aerospace, which builds guided missiles and spacecraft, had a 1978 turnover of over £270m, and at the end of last year the order book stood at close on £1bn, of which just under 50 per cent is for export. The order for the Tracked Rapier for Iran, however, accounted for £270m of this, and this deal has now been terminated, but Dynamics Group is hopeful of filling the gap with other orders from overseas.

The production of the group comprises air-launched missiles (such as the new Sky Flash air-to-air weapon for the Tornado combat aircraft): Army missiles (such as the Rapier light anti-aircraft system, and the Swingfire anti-tank missile); and Naval missiles (such as the Sea Dart medium-range surface to air missile and the Seawolf short-range anti-missile-missile). New missiles in all these fields are under study for the 1980s.

In space systems, the group is associated with the two major European consortia (MESH and STAR), building satellites for both scientific research and direct applications. Among projects under study are several for further scientific space work and for the development of space communications through the European Communications Satellite (ECS) and the Maritime Applications Satellite (MARECS), contracts for both of which are under way.

Rolls-Royce, which is wholly-owned by the Government through the National Enterprise Board, earned a pre-tax profit of £11.7m last year, down on the previous year's level of £20.3m. Sales amounted to £763m, compared with £704m in 1977.

The company achieved a record volume of new business, signing contracts for engines which would be worth more than £2bn over the years ahead. The RB-211 engine is now the company's biggest single civil engine venture, with orders and options for over 1,200 engines in all versions, of which well over 700 have been delivered. In the civil field, other major engines still selling well include the Dart turbo-prop, the Viper turbo-jet and the Gem helicopter engine.

Ventures

In the military field, the major programme is the RB-199 engine with Turbo-Union for the Tornado combat aircraft, which is likely to involve a total production of over 2,000 units, but other major engine ventures include the Adour, the power-plant for over 500 military aircraft world wide, including the RAF Hawk. The Pegasus is in service with the Harrier VTOL fighter and is designated for the U.S. AV-8B Harrier; while the Spey is not only still in service in civil airliners such as the One-Eleven but has also been selected as a military power-plant for the new Italian AMX close-support aircraft. The Tyne turbo-prop is used for the Italian G-222 military transport.

Short Brothers and Harland, the Belfast aircraft manufacturer which is also now wholly owned by the State, had a buoyant inflow of orders last year, which was also characterised by rising productivity in an atmosphere of good industrial relations, and full Government backing for the company's five-year Corporate Plan.

This provides for continuation of the three main activities of the company—production of its own Skyvan and SD-330 aircraft, aerostructures work for other companies (such as pods for Rolls-Royce RB-211 engines for Boeing 747s and Lockheed TriStars), and the design and manufacture of guided weapons. A major objective will be to exploit the potential of the SD-330 Commuter-liner of which 34 have been sold with two more aircraft on option, and also to build up production of the U.S. Piper Tomahawk light aircraft. The UK Government is investing another £60m in the company during the period to 1982, by which date a major programme of capital re-equipment will have been completed. During 1978, substantial new production contracts worth more than £70m were won in the three main areas of activity, especially for the SD-330, and further sales of this aircraft are expected to be announced soon, probably during the forthcoming Paris Air Show.

Michael Donne

Expansion

CONTINUED FROM PREVIOUS PAGE

already announced this year may not be enough to cope with the rise in fuel bills, and further increases could be announced soon.

It is also becoming clearer that the re-equipment tide now flowing may be the last this century, at least for airlines of the type we have come to know in the past few years. When the next re-equipment tide begins to flow in the mid to late 1990s, for aircraft to serve well into the next millennium, it may well be for airliners of very different shapes, burning different types of fuel—such as liquid hydrogen, or perhaps some kind of fuel derived from coal.

There is now hardly an aerospace manufacturer world-wide, civil or military, who is not in some form or another conducting research already into the possibility of alternative fuels, and more economically efficient aerodynamic shapes, and it is obvious that this area of activity must expand through the 1980s. Civil aviation world-wide still only burns about 4 per cent of the total petroleum-based fuels consumed, and some significant strides have been made in fuel conservation with the new generation of airliners and engines. But, clearly, much more will have to be done.

It seems likely that some of the exhibits at this year's Paris International Air Show will be devoted substantially to this theme of thinking about tomorrow.

For the immediate future, however, there are some other problems dominating the thoughts of the aerospace industries. In the UK, the long-term plans of the new Conservative Government towards divesting itself of some of its investments in aerospace, which are substantial, are a matter of concern to many in the industry. With the bitterly fought nationalisation of the principal manufacturers (British Aircraft Corporation, Hawker Siddeley Aviation, Hawker Siddeley Dynamics and Scottish Aviation) into British Aerospace now only just settling down, there are many who believe that further political disruption of any kind can only be damaging to morale, and interfere with the indusrty's main task of building aeroplanes.

Majority

For while there is undoubtedly much business in aerospace world-wide, the majority of it, especially in civil aviation, is likely to be won within the next two to three years, and it is on the orders secured in that period that much of the industry must live for years thereafter. Anything that diverts the indsutry's attention from the immediate task of winning orders for ventures that are new, like the A-310 Airbus, or have yet to get off the ground, such as the BAe 146 four-engined jet feeder-liner, is not likely to be endorsed by the industry's managers and workers.

The world's aerospace industries also face some immediately severe problems in the supply of skilled labour, materials and machine tools. All are in demand in a wide range of advanced technological industries world-wide, and the pressures thus generated are making it difficult for the aerospace industries of Europe and the U.S. to get all they need in all three areas. These shortages are not yet constraining factors in the production of new civil airliners and military aircraft with consequent stretch-outs of delivery dates, but they might well be in the early to mid-1980s.

Similarly, in civil aviation, a shortage of pilots is emerging that could become more severe in the early to mid-1980s, and already moves are being made in some countries, notably the UK, to identify the possible sources of new recruits and to find ways of encouraging them to join the airline industry.

The other possible area of difficulty in the years ahead is that of finance—funding all the developments and the new business that the aerospace industries can see emerging. On the military side, much of the funding for new developments is likely to continue to come from governments, but sales may well also have to be subsidised by the vendors in some parts of the world, as part of politico-economic aid.

On the civil side, there appears at present to be no shortage of available cash for the airlines to buy the new generation of jet airliners—indeed, banks and even governments appear to be falling over themselves to provide or guarantee long-term loans for airline re-equipment, encouraged no doubt by the confident reports of expansion stemming from the airline and aerospace industries.

But the magnitude of the sums that will be outstanding in the aerospace sector through the decade or so ahead will be such that there will be considerable pressures on the aerospace and airline industries to improve efficiency and to increase productivity. As a result, competition is likely to become fiercer—as it already has, for example, between Boeing, hitherto the juggernaut of the world airliner business, and the comparative newcomer, Airbus Industrie in Western Europe. The period ahead is one full of promise, with massive business waiting to be won, but it may well also be a period full of difficulties and even heartbreaks for some.

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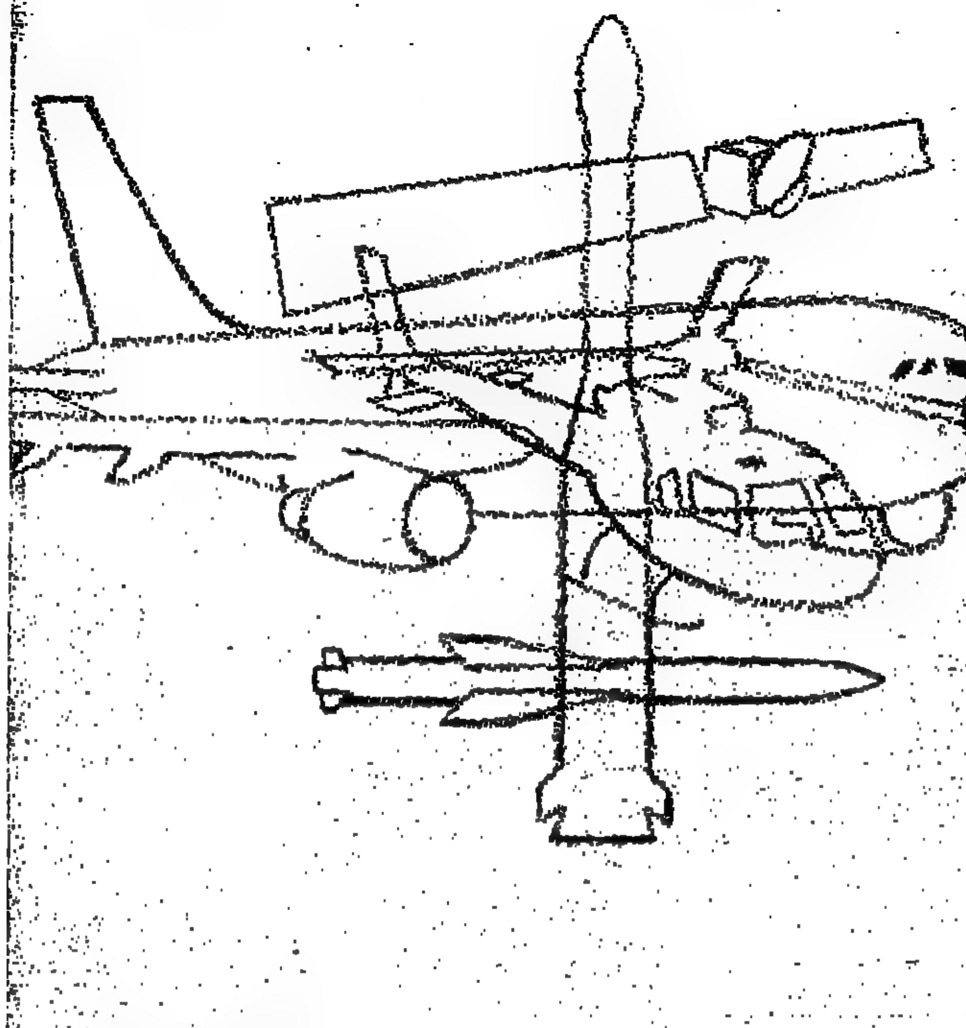

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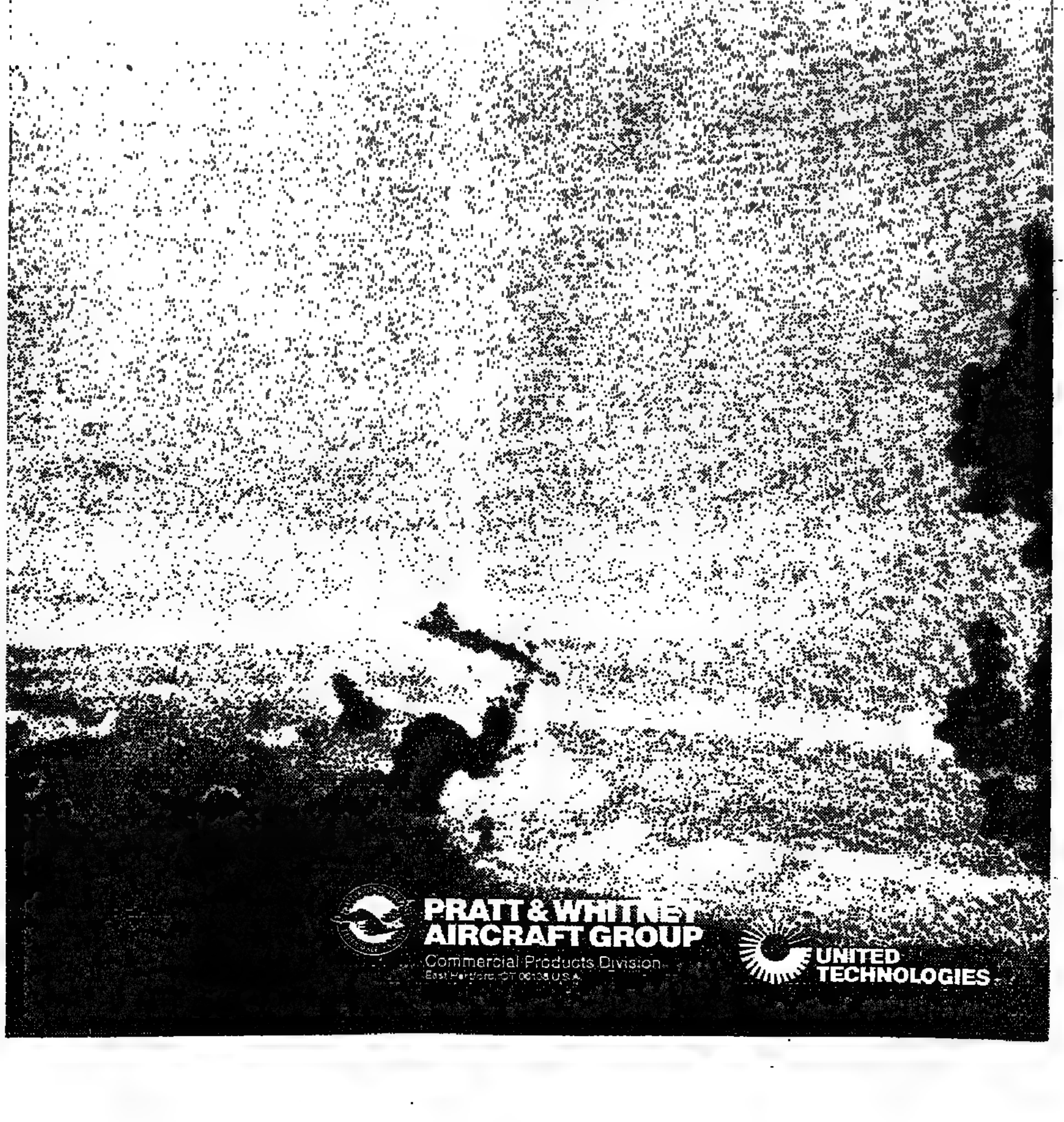

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Fierce struggle in engine market

WITH THE world's airlines likely to commit themselves for more than 3,500 airliners worth close to £40bn over the period immediately ahead, the aero-engine manufacturers are involved in just as fierce a struggle as their airframe counterparts to win a share of this business.

The aero-engine element of any new airliner is generally estimated to amount to about a quarter of the basic fly-away value, rising to about a third if initial spares are also included. Over the life of the aircraft, of anything between 15 and 20 years, at least the same value again is likely to be spent on spares, so that the engine makers are bidding for shares of a total market that could amount to anything up to about £25bn to £30bn between now and the early 1990s.

With such a massive market at stake, it is not surprising that the battles are fierce. This is especially so now that the airframe makers are offering their wares with a choice of engines.

Boeing, for example, is offering its 747 Jumbo jet with a choice of "big thrust" engines from all three of the major engine companies—the Pratt and Whitney JT-9D, the General Electric CF6 Series and the Rolls-Royce RB-211—all of which are available in a variety of models. The medium to long-range wide-bodied jets, the Lockheed TriStar and McDonnell Douglas DC-10 are also theoretically available with a choice of engines, although so far as the TriStar is concerned the RB-211 is the only choice to date by all customers, while the DC-10 is being offered with either the GE or Pratt and Whitney engines.

In the smaller, short-to-medium range category of new-generation airliners, the field is wide open, and it is here that the fiercest battles are taking place. Boeing, for example, is offering its new 767 airliner with a choice of engines from all three major manufacturers, and its 757 with a choice between the General Electric CF6-32 and the Rolls-Royce Dash 535 version of the RB-211, with the latter so far selected as the "launch engine" for the 757s ordered by Eastern Air Lines of the U.S. and British Airways.

It is vital that Rolls-Royce exploits this lead in the 757, for the competition from General Electric is formidable, and growing. The latter company has signed agreements with Volvo Flygmotor in Sweden, Snecma of France and Alfa Romeo of Italy to help it to develop the CF6-32 for this class of airliner, and some airlines interested in the 757 are known to be thinking also in terms of the GE engine against the RB-211-535. The opportunity offered to Rolls-Royce is unlikely to recur, and if the Dash 535 should fail for any reason — either on price, delivery dates or performance — there is a powerful competitor waiting in the wings to move in and capture what could be one of the biggest engine markets of all time.

Rolls-Royce, however, is well aware of this, and is pushing the 535 hard, making it plain to its labour force that the current opportunity could, if exploited, bring the company many years of business, estimated to be worth up to £5bn between now and the rest of this century. A development batch of ten Dash 535C engines is being built, six of which will be on test before the end of 1979. Certification of the engines is set before mid-1981. Deliveries of production engines to Boeing begin in 1981, and the engine will enter service in early 1983.

Battle

With the 250-seat wide-bodied, twin-engined European A-300 Airbus, and the smaller 200-seat A-310 version of that aircraft, the engine battle is between General Electric, with its CF6-50 series of engines, and Pratt and Whitney with its JT-9D. In recent weeks, various airlines have selected one or another of these engines, but so far, Rolls-Royce is not in this fight.

This is regarded by many in the world airline business as a mistake on the UK company's part, for it is now quite clear that there are going to be many more sales of the A-300 and A-310 world-wide in the years ahead, and that if Rolls-Royce does not move soon to get its RB-211 engine onto either aircraft, even in anticipation of orders, spending its own money to cover the costs of certification, it could lose a substantial slice of the world engine market.

For while to get the RB-211 certificated on the Airbus would cost a substantial sum, say about £25m, and that this should be justified by orders, it is also a fact that those orders are less likely to emerge if the RB-211 is not seen to be clearly available and ready—especially now that British Aerospace itself has a 20 per cent stake on the aircraft, building the wings for both the A-300 and A-310.

In the meantime, the two other big engine builders, General Electric and Pratt and Whitney, continue to capture the market in the Airbus. In the first three months of this year, Pratt and Whiteney, the biggest jet engine builder in the world, has won new engine business worth well over $300m, more than double the business it logged in the comparable period of 1978, with its JT-9D engines being selected in various versions for Boeing 747s, McDonnell Douglas DC-10s, Airbus Industrie A-310s and A-300s, and its JT-8D engines being selected for more Boeing 727s and 737s, and McDonnell Douglas DC-9s.

One feature of the aero-engine battle now emerging strongly is the growth of the "re-engining" market, whereby existing ageing DC-8 jets are to be fitted with the new-generation CFM-56 engine, built by CFM International, the Franco-U.S. (Snecma-General Electric) consortium. This 22,000 lbs-plus engine has been selected by United, Delta and Flying Tiger for many of the DC-8s in their fleets, and it is likely soon that some airlines with ageing Boeing 707s will also decide in favour of re-engining them with CFM-56s.

It is estimated, for example, that there are 240 DC-8 Series 60 aircraft in service, most of which could be re-engined with the CFM-56, yielding a market for over 1,250 engines over the next ten years, including spares. In addition, there are some 500-plus Boeing 707s, 737s and military KC-135 tankers that could also use the CFM-56 engine. The total business, therefore, could run to as many as 3,000 engines, worth well over $6bn. The importance of this business to the Franco-U.S. aerospace industry can be seen from the fact that the sale of seven CFM-56 engines and spares is equal to that of one Airbus.

Behind these battles for new engines in the short-to-medium range and long-range jets for the 1980s and beyond, there is likely to emerge another major demand for engines in what is generally called the "Spey replacement" class—that is, for engines of 16,000lbs thrust and above. It is agreed that sooner or later a market is likely to emerge for a new aircraft in the 100-130 seat category for short-range duties, that will require a new-technology engine sufficiently quiet and fuel-efficient for use throughout the rest of this century and into the next.

Bracket

Such an aircraft could be the projected Fokker Super F-28 (F-29), or a British Aerospace One-Eleven replacement, or something new from Airbus Industrie in Europe in its "Joint European Transport" programme, while Boeing of the U.S. is also looking at possible developments of its own 737 short-range jet airliner and McDonnell Douglas is looking at further derivatives of the DC-9. But whatever this new aeroplane is, and no matter where it comes from, it will need a new engine of somewhere in the 16,000lbs-plus thrust bracket.

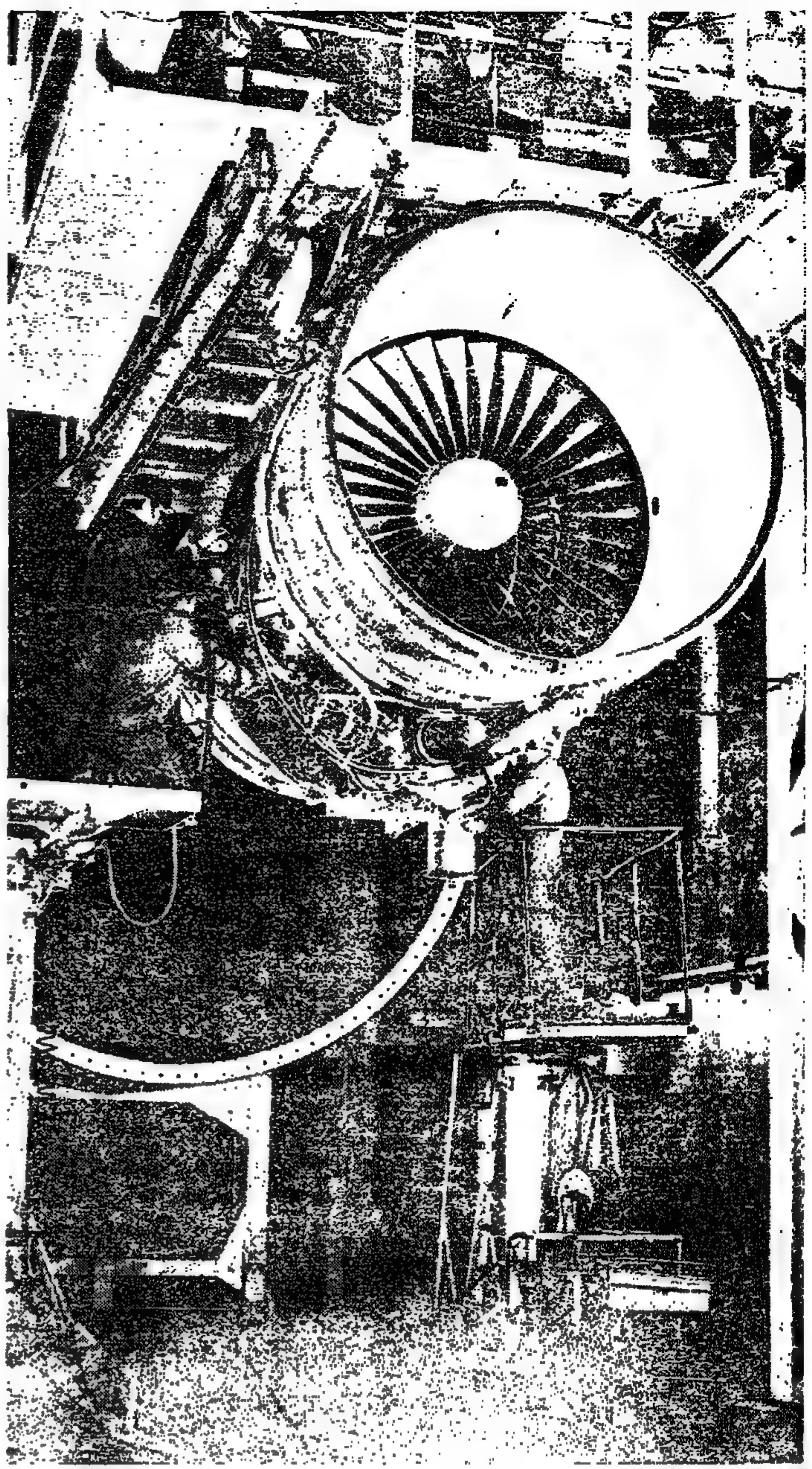
Rolls-Royce believes that it has one possible candidate with its RB-432, of 16,000 to 18,000 lb thrust. Pratt and Whitney has been working on derivatives of its JT-8D engine, including the Type 217 of 20,000 lb thrust which is already being offered in new versions of the DC-9 airliner, while the CFM-56 itself is being offered in a "de-rated" version of about 18,000 lb thrust.

All of these are engine possibilities for a 100-130 new-generation jet airliner, while beyond that the possibility of a bigger 130-160 seater jet has also been widely mooted. This would require a bigger engine, which the CFM-56 in its existing version might well be able to fill, but Rolls-Royce would have to find something between the RB-432 and the Dash 535 version of the RB-211 if it wished to get into this 130-160 seater market.

Below this field again there is another major market emerging, for a new engine for business and executive jet aircraft. Here, as with the bigger aircraft, the need is for increased fuel efficiency and lower noise, and Rolls-Royce has been working on its RB-401, of 5,500 lb thrust, as a possible candidate for this market.

But because Rolls-Royce has heavy commitments on its existing RB-211 programmes, it seems unlikely that the UK Government would agree to help finance further new engine programmes such as the RB-432 and RB-401 in anticipation of orders. Thus, it would appear that it is up to Rolls-Royce itself to ensure that the airframe builders and the airlines and business-aircraft users round the world are aware of its projects and programmes, and to canvass for the commitments that will enable these new engines to be formally launched into full-scale development.

M.D.



The Rolls-Royce RB-211 Dash 535C engine is now under intensive development for the Boeing 757 twin-engined jet airliner, which is due into service early in 1983. The engine will have a thrust of upwards of 32,000 lb. Test running has begun at the the Rolls-Royce Derby factory, and six engines will be on test by the end of this year.

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Orders roll in for new generation of airliners

DURING THE first half of this year more than 350 new jet airliners of all kinds have been ordered throughout the world. Together with more than 700 new jets ordered worldwide during 1978, this means that well over 1,000 new jets have been earmarked for the world's commercial airline fleets for the 1980s and beyond worth collectively more than $25bn (over £12bn).

Thus, the long-awaited "re-equipment tide" is now clearly flowing strongly, both to replace existing ageing and increasingly noisy and fuel-thirsty fleets, and also to provide additional capacity to meet the anticipated expansion in world air passenger and cargo traffic in the years ahead.

Boeing of the U.S., the world's biggest commercial jet builder, has estimated that there will be a requirement for more than 3,500 new jets, worth some $79bn (nearly £40bn) between now and 1988, of which about 30 per cent will be to replace existing fleets, and 70 per cent to meet traffic growth.

Of this market, Boeing believes that the short-range requirement will amount to some $17bn, the medium-range market for some $29bn, and the long-range market for about $30bn, with all-cargo aircraft accounting for about $3bn.

As to geographical distribution about 43 per cent of all spending by the airlines will be in the U.S., about 28 per cent by airlines in Europe, and some 29 per cent in the rest of the world.

Boeing further analyses the market by demand for various sizes of aircraft. In the vast short-to-medium range market (that is, up to 2,700 statute miles), it believes there will be the biggest demand, for some 46 per cent of all aircraft purchases, for "small" aircraft seating up to 160 each. This presages a continued steady demand for Boeing's own existing 130-seat 737 twin-engined short-range jet, and its 150-seat 727 three-engined medium-range jet.

For the "medium size" of aircraft, of between about 150 and 250 seats, it foresees some 25 per cent of the market—an area that will include not only its own new 177-seat 757 and 200-seat 767 twin-engined airliners, but also their rivals from the European Airbus Industrie consortium, the 250-seat A-300 and the smaller 200-seat A-310.

In what it calls the "large" size of short-to-medium range airliners, seating over 250 seats each, there will be a demand accounting for some 6 per cent of the overall market.

The rest of the deliveries between now and 1988 will go to the long-range sector of the market—*that is, for airliners* capable of more than 2,700 statute miles. Here, Boeing believes that some 18 per cent will go to the bigger aircraft, seating more than 250 passengers at a time—its own 747 Jumbo jet, the McDonnell Douglas DC-10 and the Lockheed L-1011 TriStar in their various versions. A much smaller share of the market—about 5 per cent—will go to the medium-sized long-range jets, seating between 160-250 seats.

Sustained

When measured against the Boeing predictions, it can be seen that the orders placed over the past 18 months, more than 1,000 aircraft, amount to close to one-third of the anticipated total during the current period of fleet re-equipment. The sustained rate at which the world's airlines have been buying over the past year and a half is such that the bulk of the re-equipment needs of the biggest airlines will have been settled by about 1981-82, and that thereafter demand is likely to slacken.

Thus, the orders which the major manufacturers can win between now and 1981-82 seem likely to be those they will have to live on through the rest of the 1980s, topped up with the smaller volume of demand from airlines moving up in the league table and requiring more modern equipment. The manufacturers who fail to win a sizeable share of the re-equipment cake over the next two to three years are not going to have much left to sustain them through the rest of the 1980s.

This largely explains why the battles now under way in the airline Boardrooms are so fierce, matched only by those seen at the very beginning of the jet era in the mid to late 1950s.

As might have been expected, the battles are fiercest in the big short-to-medium range market. This is where the rewards are greatest, and where the manufacturers have concentrated most of their hopes—on the existing Boeing 737 and 727 jets, the new 757 and 767, the European A-300 and A-310A, and the McDonnell Douglas DC-9.

In the larger medium and long-range areas, the battles are less fierce, but none the less significant, dominated by the three big "wide-bodies"—the Boeing 747 Jumbo, the McDonnell Douglas DC-10 and the Lockheed L-1011 TriStar, all of which are being offered in a variety of models.

In this medium to long-range market, Boeing already has orders for close to 500 Jumbo jets, and hopes to reach 1,000 aircraft by 1990. So far, Lockheed has sold 284 aircraft, including options or "second buys," while McDonnell Douglas has sold over 400 DC-10s.

But it is in the big short-to-medium range market that the battle is fiercest. The most dramatic development in recent months has been the upsurge in orders for the Europeaan Airbus, both in its 250-seat A-300 and smaller, 200-seat A-310 versions, where total orders and options now stand at 346 aircraft from 29 customers, of which 239 are for the A-300 (167 firm and 72 options), and 107 are for A-310s (52 firm and 55 options). Airbus Industrie is now, in fact, Boeing's most formidable competitor, for the latter's new "semi wide-bodied" 767 and its narrow-bodied 757 are the direct competitors for the A-300 and A-310 respectively.

So far, the battle appears to have gone largely Airbus Industrie's way, especially in Europe and large parts of Asia. Apart from British Airways, which has ordered 19 757s, no one outside North America, has yet ordered either 767s or 757s.

At the same time, however, apart from an early order from Eastern Air Lines of the U.S. for the A-300, with options on the A-310, no one in the U.S. has ordered either of the European jets.

The battle between Boeing and Airbus Industrie, therefore, seems to be wide open. Boeing's total orders for its new jets amount to 229 aircraft (84 767s with options on another 81, and 40 757s with options on another 24).

Target

Airbus Industrie's own sales target is a minimum of 1,000 aircraft by 1990, which compares with its break-even figure on the A-300 of between 350 and 400 aircraft. It believes this target to be realistic, especially since its existing customers will all buy further aircraft in the years ahead to raise their cumulative fleet to well over 500 aircraft. To meet anticipated demand, Airbus Industrie (in which British Aerospace now has a 20 per cent stake, building the wings for the A-300s and now also the A-310s, and with an overall design consultancy role in the Airbus programme) plans to raise its production from the present two aircraft a month to three a month by October, and further to four a month in 1980.

As the new A-310 moves in alongside the A-300, combined production will rise further to six aircraft a month by mid-1982, and then to eight a month by 1983-84. It is planned to raise this yet again to ten aircraft a month as demand justifies.

Boeing's long-term market forecasts indicate that it will sell up to as many as 2,000 aircraft by the early 1990s, combining 767s and 757s. It remains calm in the face of the Airbus Industrie onslaught, although undeniably the latter has won contracts Boeing had hoped to capture for one or another of its aircraft. But it still believes it will capture the lion's share of the U.S. market, and points to the fact that there are still many airlines throughout the world who have not yet made up their minds on what to buy for the future, and who will have to decide soon. Meantime, it continues production of its existing jet airliners—the 737 short-range jet, the 727 medium-range jet and the long-range 747 Jumbo—and this year is raising total production of these from 24 to 28 aircraft a month, a rate it expects to maintain at least through to 1981 on the basis of existing orders, proposals and options.

Boeing has a third new airliner programme, the medium-to-long range version of the 767, called the 777, a three-engined aircraft capable of carrying up to 220 passengers over 5,000 miles. But although a considerable amount of design work has been done on this (it could also use the Rolls-Royce RB-211 Dash 535 engine), no formal decision to launch it has yet been taken. Boeing is waiting for a launching customer among the major U.S. domestic airlines, but so far none have shown themselves anxious to pick up the programme. Boeing, however, refutes claims that the 777 represents a "re-invention" of the basic existing tri-jet programmes, the Lockheed TriStar and McDonnell Douglas DC-10, and claims that the 777 would be much more flexible in performance.

In the meantime, both Lockheed and McDonnell Douglas are pressing on with their own programmes, both with long-haul versions of their tri-jets, the Dash 500 TriStar and "stretched" DC-10, and McDonnell Douglas is also in the market with the latest version of the DC-9, the Super 80, which is selling well despite formidable competition.

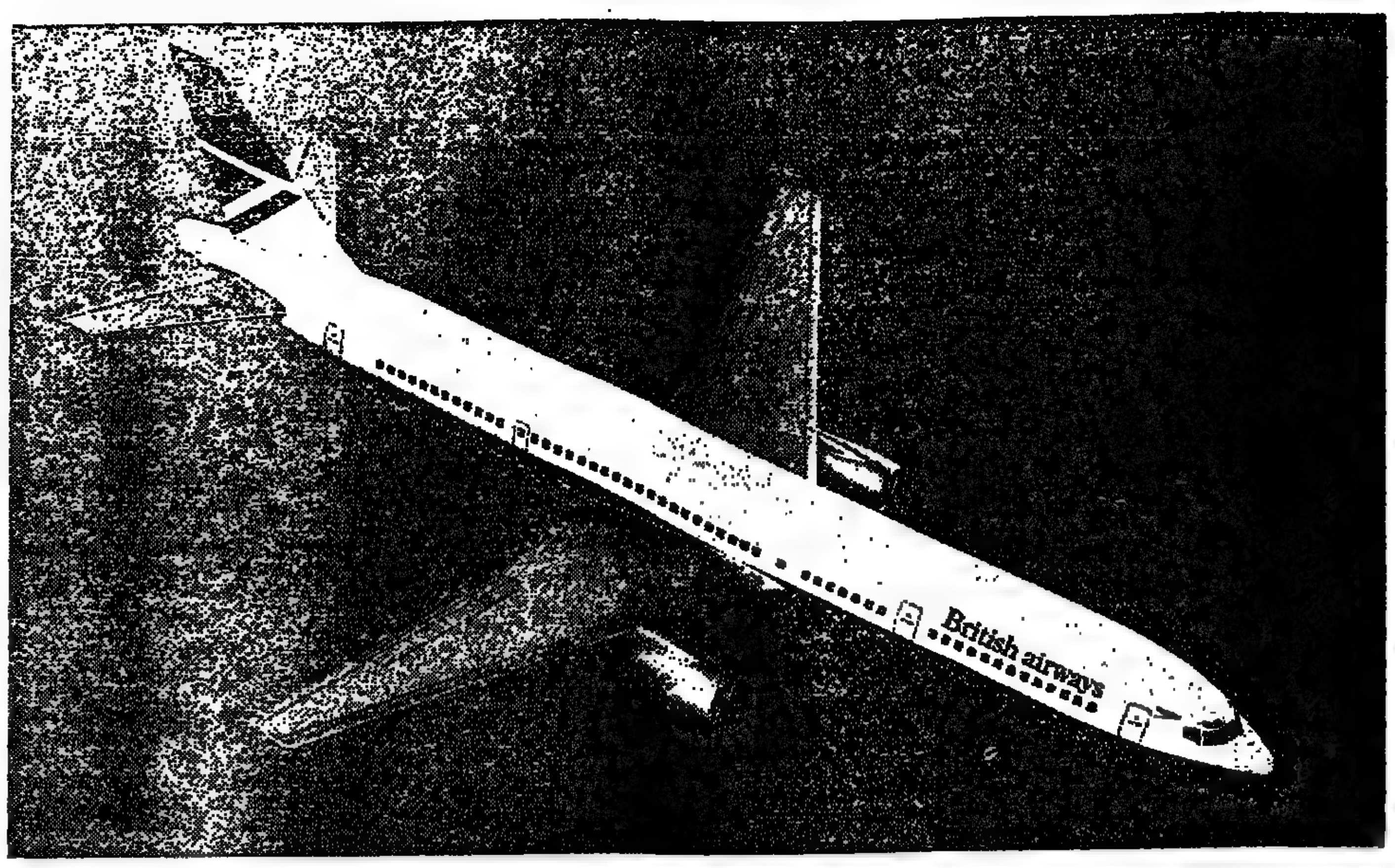
Another significant development in this battle for new generation airliners has been the decision by some U.S. airlines (United, Delta and Flying Tiger) and others to re-engine some of their older long-range McDonnell Douglas DC-8s with the new Franco-U.S. (Snecma-General Electric) CFM-56 engine, built by CFM-International. This engine, of 22,000 lb thrust and upwards, burns up to 22 per cent less fuel than the existing engines in the DC-8s, and will give more range and less noise also.

Thus a substantial market could be opening in the re-engining business. In order not to be left behind, Boeing has revived interest in its own original plan to re-engine the ageing 707 with the CFM-56, and it seems that several hundred old long-range aircraft could at least get a few years' more life from this re-engining scheme, although eventually the DC-8 airframes must run out life and lead to them being phased out in the later 1980s or early 1990s.

With all these new jets on offer, it might be supposed there was little real scope for anything more. But, in fact, many in the aviation business believe that there is a market waiting for a new, quiet, fuel-efficient jet airliner of between 130 and 160 seats—perhaps even two models of between 100 and 130 seats, and from 130 to 160 seats or so. All the major manufacturers have looked at this market, with Airbus Industrie and Boeing again apparently the most interested (although McDonnell Douglas can logically argue that it is in this field already with the DC-9 Super 80). So far, however, no airline has committed itself to this arena, and until the market-place gives a more positive sign, it is unlikely that the manufacturers will commit themselves this year or even next. But at some time in the early 1980s, some developments in these areas can be expected to emerge.

At the same time, the smaller "commuter" and "feeder-liner" areas can also be expected to blossom, with such ventures as the British Aerospace 146, the Jetstream 31, the proposed Fokker Super F-28 (or F-29), the Shorts SD3-30 and the de Havilland Canada Dash Seven all candidates for the very large sums that are likely to be spent by airlines on aircraft in the catgory up to about 100 seats.

M.D.



The Boeing 757 twin-engined jet airliner, which uses the Rolls-Royce RB-211-535C engines, in the colours of British Airways, which has ordered 19 of the aircraft

COMMERCIAL AIR TRANSPORT

(Est. m)

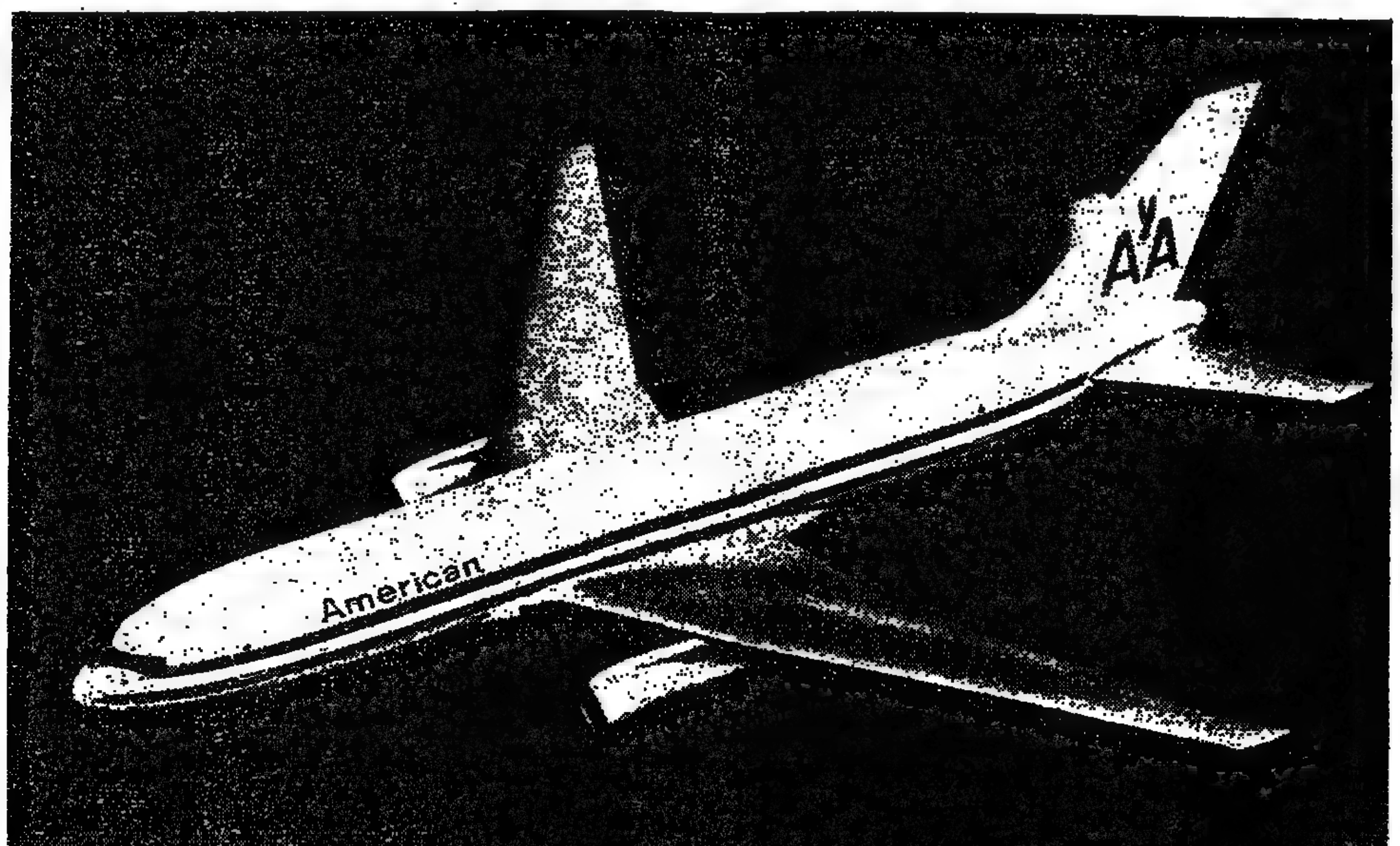
	Passenger volume	Passenger-km	Freight tonne-km	Total tonne-km	Operating revenue
% average annual growth 1968-77	+6.9	+8.1	+9.8	+8.6	+13.5
ICAO estimated volume 1977	514	686,000	21,000	85,340	U.S.$ 49,000
Estimated world volume 1978	550	743,000	22,060	93,030	U.S.$ 55,120
% difference	+7.0	+8.3	+9.8	+9.0	+12.5
% average annual growth est. 1979-88	+7.2	+8.5	+10.0	+9.0	+12.0
Estimated volume 1988	945	1,680,000	44,120	176,760	U.S.$ 121,270
Accumulated volume 1979-88	7,668	11,960,000	341,900	1,390,800	U.S.$ 915,070

TOTAL 1979-88 VOLUME BY REGIONAL CARRIERS

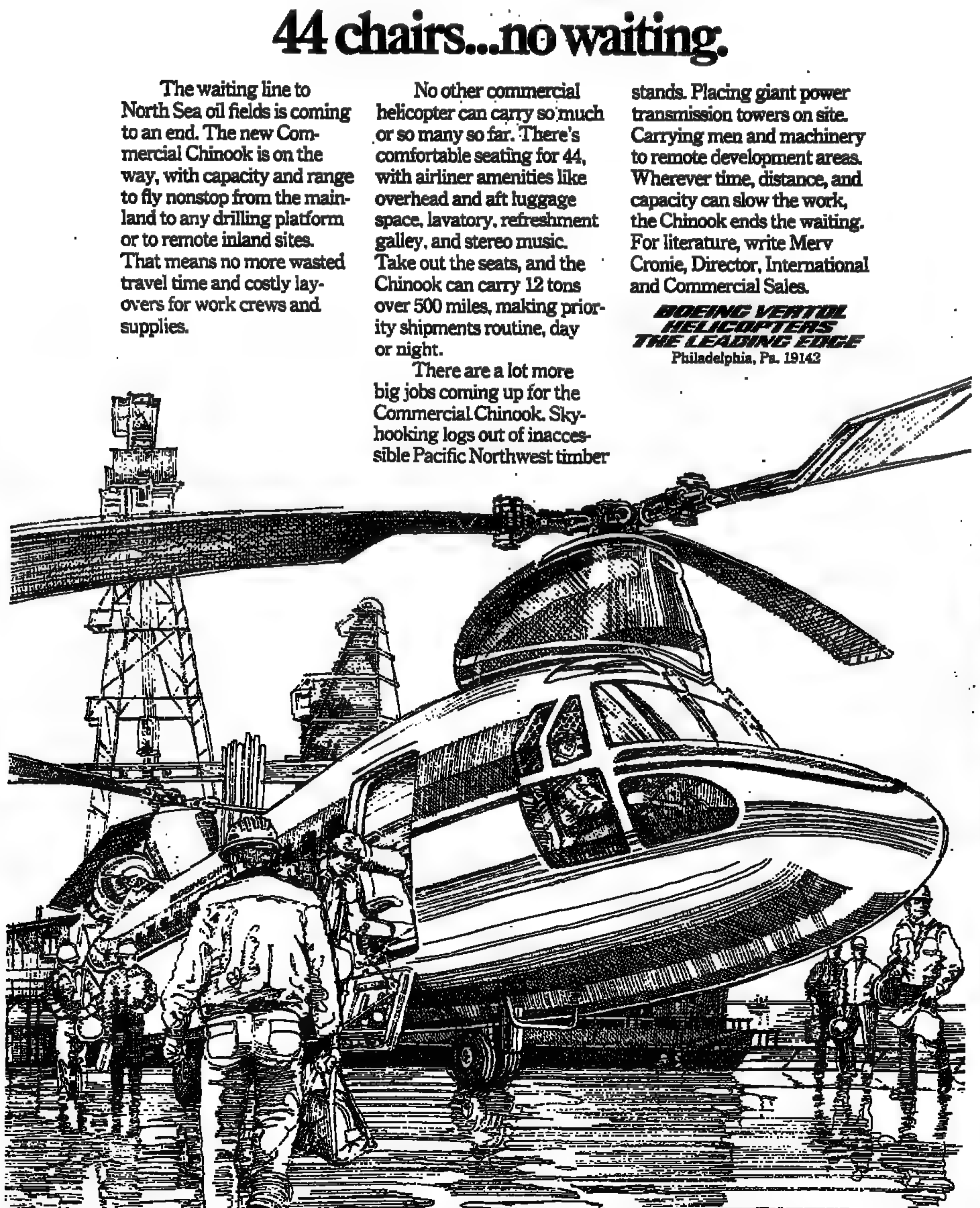
(Est. m)

	North America	Latin Amer./Caribbean	Europe	Mid-East	Africa	Asia/Pacific	Total
Total passengers	3,011	406	1,802	230	169	1,150	7,668
% share	51.0	5.3	23.5	3.0	2.2	15.0	100.0
Total tonne-kilometres	688,446	69,540	354,654	45,896	30,598	201,666	1,390,800
% share	49.5	5.0	25.5	3.3	2.2	14.5	100.0
Total operating revenue (U.S.$)	388,905	32,027	297,398	32,028	27,452	137,260	915,070
% share	42.5	3.5	32.5	3.5	3.0	15.0	100.0

Source: International Civil Aviation Organisation.



The Boeing 767 twin-engined "semi-wide-bodied" jet airliner, which has been ordered by several major U.S. airlines including American, Delta and United. It is one of two "new generation" jet airliners now under development by Boeing, the other being the 757 narrow-bodied jet, which uses the Rolls-Royce RB-211-535C engines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There are a lot more big jobs coming up for the Commercial Chinook. Skyhooking logs out of inaccessible Pacific Northwest timber stands. Placing giant power transmission towers on site. Carrying men and machinery to remote development areas. Wherever time, distance, and capacity can slow the work, the Chinook ends the waiting. For literature, write Merv Cronie, Director, International and Commercial Sales.

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Helicopters heading for major growth phase

THE DEVELOPMENT of the helicopter technologically over the past few years has been exceptionally rapid. Whereas at one time it was a comparatively expensive type of aircraft which only the military could afford, and with limited payload-range performance, it has now evolved into an increasingly acceptable vehicle, economically as well as technically, and it is able to compete vigorously with the economics of the fixed-wing aeroplane over stage-lengths of up to 250 miles.

The general belief is that the helicopter has, in fact, matured, and the second-generation models now coming forward are likely to lead to ever-widening uses for this ubiquitous type of aircraft in the years ahead, with the emphasis more likely to be on civil types than on military.

Estimates of the likely market indicate that military helicopter demand is likely to grow more slowly through the 1980s than in the civil field, with the former rising to about 15,000 machines by the end of the 1980s throughout the Western world, but with the civil market burgeoning to reach perhaps as many as 22,000 to 26,000 by the end of the decade.

By value, the civil expansion will be smaller than the military—perhaps about £4.3bn or so compared with the £7.5bn estimated for the military field. This is explained by the fact that the civil machines will be mostly the smaller, lighter type for executive use, whereas the military aircraft, although smaller in numbers, will be much bigger in size, carrying much more expensive and sophisticated equipment for such tasks as anti-submarine warfare and search and rescue.

Much of the expanding civil use is likely to be in the executive and general passenger transport market, with about 25 per cent of the fleet being devoted to off-shore oil and gas industry support operations, about 10 per cent in aerial taxi or charter work and about 5 per cent directly involved in corporate ownership for executive flying duties. The rest of the civil fleet is likely to be employed directly in a wide range of tasks, such as agriculture (crop-spraying and logging, for example), power-line inspection, police work of various kinds (including coastguard patrols and traffic control), and in civil engineering and construction.

In the forefront of this expansion of civil uses of helicopters will be the U.S. helicopter industry, whose output today is in excess of 1,000 aircraft a year. Under the undoubted stimulus of the oil industry, with a demand for efficient, economic helicopters for the transfer of crews and supplies between the mainland and offshore platforms, the civil helicopter makers have made big strides, and some new civil types are now coming onto the market, such as the Bell 222 8-10 seat light twin-turbine aircraft and the Sikorsky S-76 Spirit 12-passenger aircraft, with a cruise speed of 167 mph and a range of close on 700 miles, ranging up to the big commercial version of the Boeing Chinook twin-engined medium-lift helicopter, which can seat 44 passengers or carry up to 46,000 lb of other payload.

Types

There are several other civil types on the market. These include the Sikorsky S-61N, 26-30 seater, which continues to sell well, again mainly in the off-shore petroleum industry market; the French Aérospatiale Puma; the 10-14 passenger twin turbine engine Dauphin Two; the Italian Agusta 109 Hirundo (a twin-turbine engined aircraft for up to eight passengers); and the smaller West German Bolkow 105S, a twin turbine-engined aircraft for up to five passengers, and the Bell Jet Ranger, a single-engined 4-5 seater.

Aérospatiale has also recently announced its new AS-355 Twin Star, a light-weight twin-engined aircraft derived from the successful Ecureuil aircraft. The prototype is now being built and will fly this September, with civil certification planned for the second half of 1980, and deliveries in early 1981.

In the U.S., two of Sikorsky Aircraft's new helicopter programmes—one military and one commercial—are maturing—the U.S. Army's UH-60A Black Hawk, and the commercial S-76 12-passenger Spirit. Delivery of the first production Black Hawk to the Army last autumn launched a programme which calls for 1,107 aircraft through to 1986. The U.S. Army has already ordered 200 Black Hawks, worth more than $400m.

Customer deliveries of the S-76 Spirit began in February, and the 1979 production scheduled calls for delivery of 75 aircraft, with production reaching seven helicopters a month. Even before certification, Sikorsky had booked 203 commercial orders, and expects sales to top 1,200 helicopters in the next decade, worth well over $1bn.

Westland, as the sole helicopter manufacturer in the UK, already has substantial order books for its Lynx multi-role helicopter (279 ordered to date, of which 108 have been delivered), the Sea King anti-submarine and search and rescue helicopter, (nearly 200 ordered, of which 160 have delivered), and the Commando variant of the Sea King, of which 47 have been ordered and 32 delivered. The company is also involved with France in the production of the Gazelle light, 5-seat fast general purpose helicopter, of which well over 800 have been built to date and which is still selling well, and the Puma, a medium general purpose transport helicopter, of which nearly 700 have been ordered and over 600 delivered so far. Westland is collaborating with Aérospatiale of France in the manufacture of the Super Puma SA-332, which it is hoped will be ordered by the RAF for the early 1980s.

In recent weeks, there have been difficulties over the funding by Arab states of the Egyptian Arab Organisation for Industrialisation, which was intended to both buy and eventually build under licence in Egypt the Lynx helicopter and its associated Rolls-Royce Gem engine. Even if the AOI should eventually collapse, with the refusal of Saudi Arabia and others to finance it (because of anger over Egypt's peace treaty with Israel), it is felt that Egypt will still eventually need some Lynx helicopters, and there are still hopes of rescuing some part of the orders. Others orders for Lynx are also being actively sought in West Germany, South America, Denmark and in NATO for the Army version of the Lynx.

But it is in the field of new helicopters that Westland is now making substantial progress. It is engaged in the "project definition phase," funded by the Ministry of Defence to about £30m, of a new three-engined military helicopter, currently known as the WG-34, intended to be a "Sea King replacement." The pre-prototype aircraft should fly in about two years. It is hoped that other countries in Western Europe will join in this development, to make it an internationally collaborative venture.

Talks have been in progress for some time with Italy, whose own helicopter manufacturer, Agusta, is interested. At the same time, under the existing four-country Memorandum of Understanding on European helicopter development, plans for the WG-34 have been discussed with France and West Germany, in the hope of both countries joining in the programme. West Germany appears at this time to be less interested than France, because it is anxious to promote its own ideas for an advanced anti-tank battlefield helicopter for army use. But the French seem keen to join the programme, and could make a substantial contribution to its development for civil market.

The talks between the four countries will continue, but it may be some time before any definitive international agreement on the WG-34 emerges. Meanwhile Westland continues with the project under MoD contract.

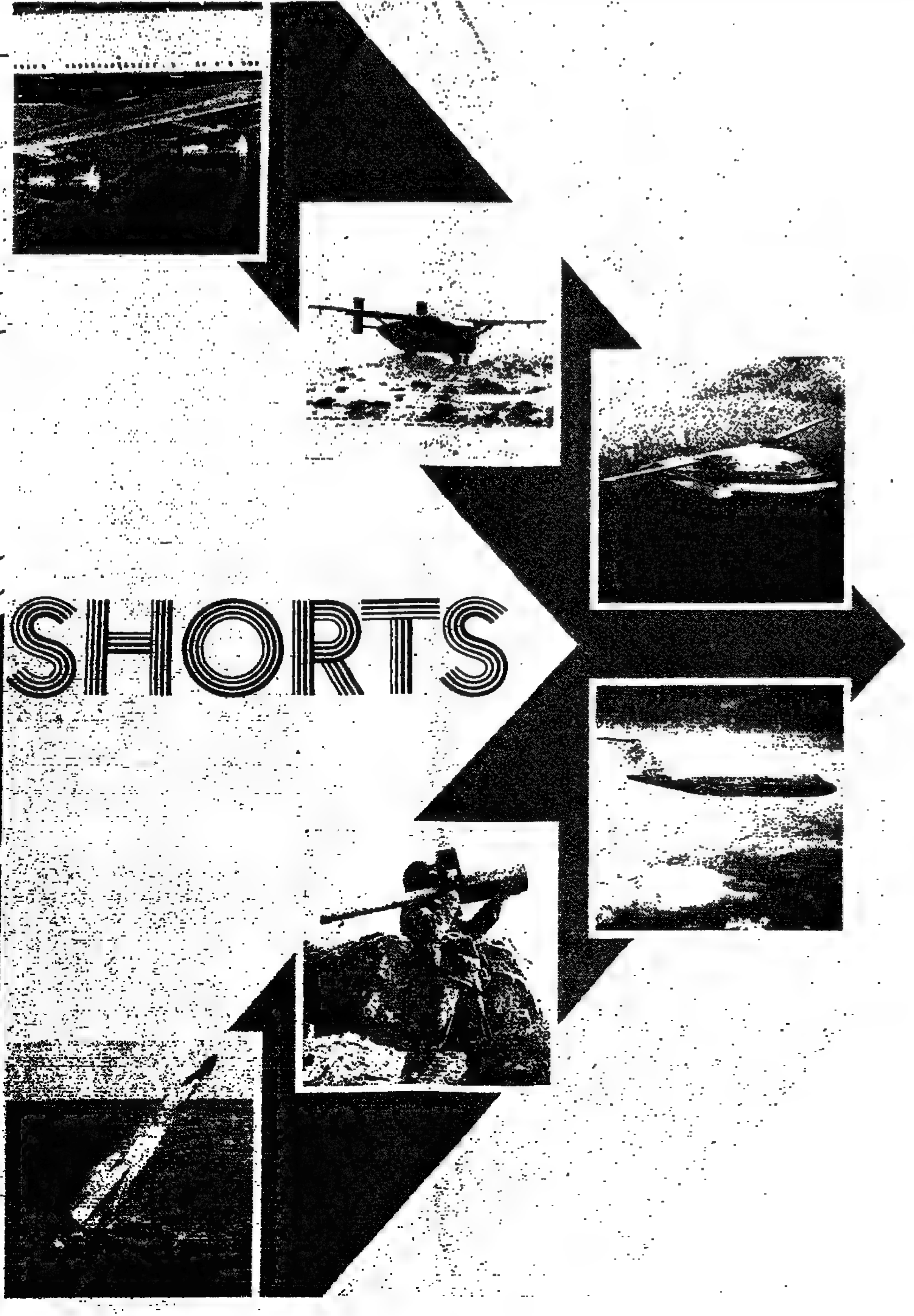
Westland Helicopters, of Yeovil, has spent £10m of its own money developing a new utility transport helicopter, the WG-30 (pictured here), intended for both military and civil markets world-wide. Derived from the company's Lynx multi-role helicopter, which is already in service with the British Army and other countries' armed forces, the new WG-30 prototype is already flying, and will be publicly demonstrated for the first time at the Paris Air Show

But of equal significance for its future, Westland has spent £10m of its own money in developing a new transport helicopter, the WG-30, a 17-21-seater, twin-engined (Rolls-Royce Gem turbines) aircraft, designed for a wide range of tasks. Primarily intended initially for the foreign military market, the civil market is also envisaged in the longer-term, where it could be used for executive and utility transport, as well as in off-shore oil support duties.

Although the WG-30 clearly owes much to the Lynx design, it is a completely new structure, specifically to meet the needs of operators engaged in rugged operations who need a strong, versatile machine of comparatively low cost—about £1.25m to buy.

While the company foresees its immediate orders emerging from the foreign military market, where sales of more than 100 aircraft are hoped for over the years immediately ahead, the WG-30 nonetheless represents Westland's bid to get into the burgeoning civil markets for helicopters which hitherto have been dominated by the major U.S. manufacturers. It will ensure that Westland is not left behind in the years ahead in what is clearly likely to be one of the most rapidly expanding areas of world aerospace.

M.D.



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Airlines facing higher costs

THE WORLD'S airlines, while facing the prospect of a steady continued growth in passenger and cargo traffic, nevertheless are also confronted with some severe problems which make it unlikely that this growth will yield substantially higher profits in the years ahead, and may indeed for the immediate future generate some losses instead.

These problems stem partly from rising costs, especially of fuel; partly from increasing governmental involvement in airline affairs (and especially government and other consumer pressures for cheaper fares); and partly from the need to replenish existing ageing, noisy and fuel-inefficient fleets both to meet traffic growth and increasingly stringent government noise controls.

It is estimated that world air passenger traffic is likely to continue rising at between 6 per cent and 8.2 per cent a year between now and 1985, and that beyond that, to 1992, the growth will slacken a little, to somewhere between 4.8 per cent and 6.2 per cent a year.

Wake

While these expansion rates may appear to be well below those experienced in the past (except for the years immediately following the oil crisis and subsequent industrial recession of 1973), they are none the less substantial by most industries' standards, and will bring some significant problems in their wake.

For, in effect, they virtually mean more than doubling, between now and the early 1990s, the number of revenue-passenger miles performed by the world scheduled airline industry, which in turn means raising the total number of passengers carried from last year's total of close to 600m (excluding the Soviet Union) to well over 1,000m a year.

Similarly, in cargo, the forecast is that the average annual growth will be somewhere between 7.4 per cent and 11.1 per cent a year up to 1985, and thereafter between 5.9 per cent and 8.2 per cent a year up to 1992. This means virtually tripling the present level of revenue tonne-miles (RTMs) performed, from the present level of about 20bn RTMs a year to between 50bn and 70bn RTMs by the early 1990s.

It is this anticipated growth that is obliging the airlines to move now into major re-equipment decisions, in turn accounting for the heavy volume of aircraft buying that has been seen over the past 18 months, and which is likely to continue for at least the next two years or so. This re-equipment tide will add more than 3,500 new aircraft to the world's commercial jet fleet, of which about 30 per cent will be for replacement of existing ageing types and about 70 per cent to meet the expected traffic growth.

But the pressures on costs already severe, will continue—especially fuel costs, which have already risen from an average of about 40 cents a U.S. gallon late last year to over 65 cents now, with further rises to between 70 and 75 cents likely before the end of this year.

At the same time fuel shortages have become severe in some quarters of the world, including parts of the U.S., where the cuts in Iranian supplies have reduced the production of aviation gasoline. Airlines have been obliged in some instances to reduce the number of flights on some routes, but by careful conservation, and by the adoption of more precise flying techniques, they appear to be coping with the shortages. But pressures on fuel supplies are likely to persist, and prices are likely to rise further, so that there will be considerable incentives for the airlines to re-equip with the new generation of jets giving substantially improved fuel consumption over the existing fleets.

These relentless rises in costs of all kinds are already a nightmare to airline managements. When they are coupled, as they are, with equally relentless government and consumer pressures for cheaper fares, the effect is a major squeeze on airline revenues that is resulting already in reduced profits and losses for some airlines. The higher volume of traffic being carried at cheap fares is not generating sufficient revenue to cover rising costs.

Most governments throughout the world have been sympathetic to airlines' problems, despite the fact that in many cases they are the cause of those problems, and they have approved earlier this year rises of between 3 and 7 per cent in fares to meet inflation. But some governments are less sympathetic, and notably that of the U.S., with the result that on the north Atlantic route the increases in fares have been less than many airlines would have liked to see.

Concern

Indeed, the whole attitude of the U.S. Government towards the international airline industry has been a cause of considerable concern over the past year or so.

The Civil Aeronautics Board has been seeking to force many foreign airlines who are members of the International Air Transport Association to "show cause" why they should not be made liable to the U.S. anti-trust laws as a result of being members of that body. If the CAB were to implement the threat of removing the IATA airlines immunity from those laws, all the foreign airlines serving the U.S. would become liable to prosecution and severe penalties — simply by being members of the IATA, a body which although approved by most other governments, is frowned upon by the U.S. Not surprisingly, those foreign governments and airlines have protested strongly to the U.S. against the CAB's attitudes, and it is hoped that as a result the CAB will be obliged to drop its threats against the IATA. The CAB has said it will be considering the matter later this summer.

The U.S. attitude is all the more resented by the IATA members because they have already vigorously tried to amend their own procedures, especially where fares-fixing is concerned, to make them more democratic and acceptable to governments such as the U.S.

Under new rules, painfully hammered out at meetings throughout 1978 in Montreal and Geneva, the IATA has now, subject to the final approvals of the member-governments of the 100-plus airlines involved, simplified the rules of membership. As a result, whereas all members of the association will be expected to participate in the technical, legal, safety and other affairs of the association (which in effect constitute up to about 80 per cent of its work), they will no longer be obliged to participate in the formerly somewhat rigid fares-fixing conferences. Instead, they will be free to fix fares on given routes on a bilateral basis, subject to the approval of their respective governments.

This means effectively that the old style of long-drawn out and somewhat inflexible fares conferences, which all the airlines in any given region were required to attend and reach a unanimous agreement on new fares, will now give way to a more relaxed system. While there will still be fares meetings, where airlines want them, they should be shorter, less complex and more likely to reach acceptable agreements.

By making this kind of change in its methods, the IATA has almost certainly ensured its own survival as a world airlines body. For it was becoming the focus of considerable hostility from some governments, especially the U.S., to the extent that some U.S. airlines, notably Delta and Pan America, felt obliged to withdraw from membership, while others may yet do so.

But even though the fares-fixing policies may have changed, there can be no doubt that IATA is still an essential ingredient to the smooth running of the world air transport system. For without it, such things as the international standardisation of ticketing, ground handling, safety and legal affairs, and the smooth operation of the big Airline Clearing House, could not occur, and it would become much more difficult than at present for international passengers to cross frontiers.

At the same time, the airlines recognise that they have still gone nowhere near far enough in their efforts to simplify many of the time-consuming procedures that still plague air transport.

The increasing pressures on available runway capacities and existing terminal buildings will only be met in future by substantially readjusting the travelling habits of many passengers and streamlining procedures so as to process those travellers through airports more swiftly than at present. Increasingly, passengers will have to accept the necessity of travelling during what are now the off-peak periods of the day or night, so as to ease strains on runways and in terminals.

At the same time, airport authorities themselves will have to try to eliminate many of the bottlenecks that occur. Customs and imigration facilities must be simplified, and where possible even abolished, while security checks can be reduced to the minimum necessary for safety. Baggage reclaim, a constant source of aggravation, must be speeded up considerably, whilst check-in procedures could be made simpler. At airports, traffic flows into and out of terminals could be improved.

These are only some of the areas where, despite all that has been achieved in the world air transport to date—and that is a great deal—more has still to be done, if the challenge of remorselessly rising traffic is to be met through the 1980s and beyond.

M.D.

The Airbus Industrie twin-engined A-300 250-300-seater Airbus has swept through world markets over recent months, and production at the consortium's Toulouse, France, factory, is being increased to meet an order book which is now approaching the 350 mark for all versions of the aircraft. British Aerospace has a 20 per cent stake in the group on behalf of the UK Government, building the wings for the A-300, and its smaller variant, the A-310, and holding also an overall design consultancy role.

Big spending ahead on airports

WORLD AIRPORT construction and equipment contracts worth up to £14.4bn are expected to be awarded between now and 1988, in what is likely to become one of the greatest periods of growth — and spending — ever witnessed in the civil aviation industry.

The expansion — forecast by the International Civil Aviation Organisation (ICAO) — will be required to meet the growth in passenger and cargo traffic expected by world airlines and especially the development of civil aviation in Third World nations.

All these civil aviation programmes, including new aircraft, fuel spending, almost £9bn of air traffic control systems, £2.4bn handling systems and maintenance charges of all kinds, as well as "general aviation" costs, will collectively cost at least £230bn over the period, the ICAO has forecast.

The pressure for expansion, however, is certain to be accompanied by pressures from some governments for spending restraints, and this may have its effect on the timing of airport expansion plans.

Environmental lobbies, landowners and Governments have already been instrumental in affecting planning procedures for new airports. The impact of the pressure groups and interested parties is unlikely to wane, particularly in the developed world. Here the pressures are the greatest, as a result of the popularisation of air travel and the congestion it has brought in its wake.

In the Third World nations, however, where airport projects are often regarded as essential to meet the demands of growth and prestige these pressures are so far largely unknown.

Capacity

Africa is the main development area. European and Asian airports all still have some surplus of capacity for at least the early years of the next decade. There are exceptions, of course, and London's Heathrow Airport, is one which is likely to reach its full capacity of 30m passengers a year perhaps within two years.

But in Africa, where new airports may flourish, the ICAO has estimated that one country, Nigeria, will account for over a quarter of the total value of airport construction and maintenance programmes up to 1988.

These world airport projects are expected to be worth over £6.25bn, excluding land purchases. The Nigerian share is based on 12 large projects now being planned.

A further 14 per cent of the total value of projects will be accounted for by 30 smaller airports in Zaire. South Africa has plans for seven projects which may take up a similar share.

Egypt has plans for four airport projects and these may account for 7 per cent of the total world airport construction and maintenance programme. North Africa may take up a further 14 per cent of the total value and much of the balance may be taken up by various East and West African programmes.

Expenditure will continue on projects in North America, but most of it will involve the modernisation, expansion and maintenance of existing airports.

The absence of large scale, "green-field" site projects in the U.S. is no reflection of lack of demand. The U.S. had the two busiest airports in the world last year. O'Hare Airport, Chicago, had almost 50m passengers, and Hartsfield Airport, Atlanta had just over 40m passengers. Heathrow, London, was the busiest airport outside the U.S., handling 26.5m passengers last year.

The Chicago O'Hare Airport was also the world leader in the number of aircraft movements, at over 777,000 last year.

Many of the airport problems of the developing world will be discussed at the Sixth World Airports Conference to be held in London on June 5, 6 and 7, sponsored by the Institution of Civil Engineers, the Royal Aeronautical Society and other professional institutions.

In Britain planners are concerned with a growing shortage of airport capacity at the three main London airports during the mid-1980s.

The UK Government, in its White Paper on Airports Policy, published in February, last year, suggested that extra capacity in the South East of England—where most of Britain's passenger demand is concentrated—could be met in the short-term by expanding existing airports, with no need for a new "green-field" airport until the 1990s.

In the event, however, traffic growth has overtaken the forecast, and the need for new capacity is becoming increasingly urgent.

Heathrow airport has an annual capacity of 30m passengers. Last year it handled 26.5m passengers and is expected to be saturated by the early 1980s, if not before. So serious is congestion already becoming that some long-haul flights at the airport which normally use Terminal Three, may this summer be moved into other Terminals to ease the strain. British Airways is even considering moving its Chicago services from Terminal Three to Terminal One, now used for short-haul domestic and international flights.

This approach, while certain to have some marginal impact on congestion if applied to other services, is regarded by the British Airports Authority only as a "fine tuning"—an attempt to match demand with existing capacity.

The British Airports Authority's own favoured option of a fourth terminal at Heathrow, to boost capacity by 8m to 38m passengers a year by 1984, is awaiting a Ministerial decision.

Similarly, a plan to boost the capacity at Gatwick Airport, south of the capital, from the present 16m passengers a year to 25m passengers a year, is to be the subject of another Public Planning Inquiry this year.

But, in the longer term, it is becoming increasingly clear that even if the fourth Heathrow Terminal and the second Terminal at Gatwick are approved, there will still be a need for further airport capacity in the London area.

The urgency for more airports capacity in the South-East is underlined by official figures for estimated passenger demand up to 1985. The total number of passengers for the 1978-79 financial year in the three south-east airports was 34.9m. This is expected to rise to 40m next year, and to 43.3m in 1981. The demand will match the capacity of the airports in 1982, when 47m passengers are expected to use them.

Under existing approved plans, there will be no extra capacity to match this demand, either then or in 1983, when it will have reached 51m passengers a year.

By 1984 the British Airports Authority has estimated that 54m passengers will use the three South-East airports. But capacity may then be only 55m, even if the fourth terminal at Heathrow is built. But if the growth pattern is maintained and the proposed second Gatwick terminal is not ready by 1985, demand—at an estimated 57m passengers—will again have outstripped capacity.

This whole question of future airport development in the South-East is the subject of a study by both the Government-appointed South-East Airports Study Group and the Airports Policy Advisory Council, set up in 1978 on the advice of the British Airports Authority, and including among its members a wide cross-section of interested organisations — Government Departments, local authorities, trades unions and others.

A report from the South-East Airports Study Group recently outlined six likely areas of possible new "green-field" sites for a third major airport for London, for further detailed examination — Hoggeston, Buckinghamshire; Langley, on the Herts and Essex border; Maplin, Stansted and Willingale, all in Essex; and Yardley Chase on the Northamptonshire and Buckinghamshire border. Further examination of each of these will be conducted this summer, and a final recommendation by the South-East Airports Study Group is expected to go to the Government this autumn.

It will then be up to the Government to decide which course to adopt for the future—either to develop Stansted or one of the "greenfield" areas. It will be a controversial as well as a difficult decision, and whatever course is adopted, there is likely to be an environmental dispute of considerable proportions.

Lynton McLa

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Combat aircraft projections

ITARY AIRCRAFT manu- urer's world-wide are agreed t the market for combat air- ft of all kinds will remain yant through the 1980s, des- continued pressure from e Governments for reduc- s in arms sales of all kinds, uding the ceiling imposed the U.S. itself of $8.4bn on- ual sales to non-allied ons, as well as the loss of e recent orders, for example Iran and Egypt.

hese manufacturers collec- ly believe that upwards of 0 new combat aircraft are ly to be ordered throughout next decade, with an esti- ed total value of more than 0bn (over £50bn), including res and support costs ough the lives of the aircraft squadron service.

he figure is only a broad mate, for no specific detailed ies of future military air- t markets are available— ly because of the sensitive re of the market, and ly because of political un- ainties about various ntries' long-term intentions.

eplaced

ut the estimate is based on fact that several current s of aircraft in service will d to be replaced pro- sively through the 1980s 1990s—for example, over 0 Phantoms, and over 1,000 fighters. The air force ntories of the U.S. and some atries in Western Europe, already beginning to be d with new production, uding McDonnell Douglas s, General Dynamics F-16s, mman F-14s and other s, while in Western Europe, the Tornado Multi-Role bat Aircraft begins to move service next year. The and for new combat air- t in the years ahead will r all types of aircraft— light combined trainers strike aircraft, through to plex multi-role aircraft with ly sophisticated weapons ems.

ost of the orders are likely e in the U.S., which is the est military aircraft builder the Western world. But nates for the market ugh the 1980s outside the and other NATO countries indicate that it could amount to close to $46.5bn (or more than £23bn), broadly divided into four major categories, according to size and weight of aircraft.

Category A, which covers light strike-trainers and comparable aircraft of 3,000 to 8,000 kilogrammes weight (such as the Strikemaster, Hawk, Alpha-Jet and Macchi 326 and 339), could be worth up to $7.8bn or about 16 per cent. Category B, for ground-attack aircraft of 8,000 to 12,000 kg, such as the Harrier, the Hunter, the Northrop F-5, could amount to as much as $12.7bn or 25 per cent.

Category C, for larger strike and air superiority aircraft of 12,000 to 16,000 kg (such as the Jaguar, Mirage F-1, F-16s and F-18s) could account for about $15.75bn, or 36 per cent. In Category D, for complex multi-role aircraft types above 16,000 kg (such as the F-15, the Grumman F-14 Tomcat and the Swedish Viggen, among others), the market could be worth some $10.2bn, or 23 per cent.

By far the most significant military aircraft programme now under way in Western Europe is the Tornado multi-role combat aircraft, in which more than 70,000 workers in three countries—the UK, West Germany and Italy—in more than 500 companies are building 809 aircraft for the RAF, Luftwaffe, German Navy and Italian Air Force. The first production MRCA is due to fly this summer, and the first deliveries to the German Luftwaffe and RAF will be made next year.

The Tornado is a two-seat, twin-engined, swinging-wings (variable geometry) military aicraft that will be capable of flying at more than twice the speed of sound (Mach 2.2 or 1,300 mph) at great heights, and also at supersonic speeds at low level.

Of the 809 production aircraft (16 prototypes and pre-series pre-production aircraft have also been built and are now flying) the RAF will be taking 385, of which 220 will be of the basic interdicter strike and attack (IDS) version, and 165 will be the Air Defence Variant (ADV). West Germany will be taking 324 IDS aircraft for the Luftwaffe and Marineflieger (Germany Navy Aviation), while Italy will be taking 100 for the Aeronautica Militaire Italiana. So far, 150 of the 809 production aircraft have been authorised, of which 78 are for the RAF, 57 for the Luftwaffe and 15 for the Italian air force. But a further production batch of 164 aircarft is due to be announced any day now, bringing total production authorised to 314 aircraft.

Tempo

Further batches of production aircraft will be authorised at intervals, so as to maintain the tempo of production through the mid to late 1980s. The estimated unit production cost of each Tornado of the IDS version is £9m at September, 1978, economic conditions, while that for the ADV Tornado is £10.7m. This gives an estimated production cost for the 644 IDS aircraft of nearly £5.8bn, with nearly £1.8bn for the 165 ADV aircraft, or a total production cost for the entire programme of about £7.6bn. If research and development costs are also taken into account, the overall programme cost seems likely to be more than £8bn spread across the three countries involved; and over a period of more than 10 years.

The Tornado aircraft is being designed to fill several major roles:

Battlefield interdiction—the support of ground forces in the forward battle zone, requiring large weapons payloads and excellent manoeuvrability.

Interdiction / counter air strike—destroying the enemy's ground installations, supply depots, airfields and communications.

Naval strike—delivering a wide variety of weapons in all weathers against ships and coastal installations.

Air superiority—denying the freedom of the air to the enemy, and giving protection to friendly ground or naval forces.

Interception-Air Defence—Long air patrols far out over the Atlantic to destroy incoming enemy bombers at high altitude, while long-range reconnaissance at all heights is essential to the planning of ground and air operations in war-time.

Training—This is most effective in a two-seat aircraft, such as the Tornado, of which a trainer version is being built.

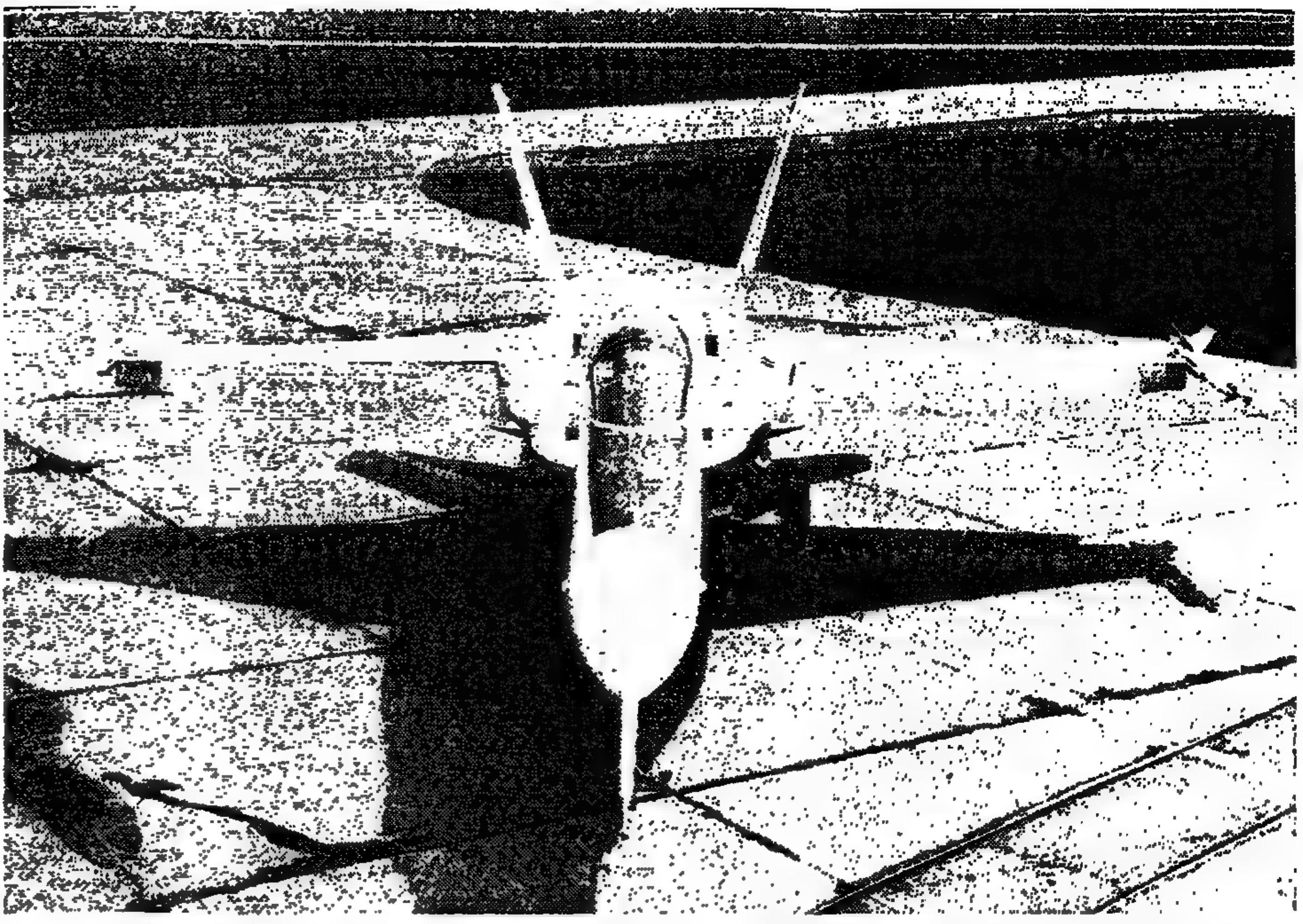
The Tornado is being built in two principal versions, the basic version or interdictor strike (IDS), capable of all the above roles except interception/air defence. This latter task is being allocated to a specialised version, the ADV or Air Defence Variant, which will be used solely by the RAF.

For the RAF, the Tornado will replace Vulcans, Canberras, Phantoms and Buccaneers in the overland strike, battlefield interdiction, reconnaissance and maritime strike roles, and replace Lightnings and eventually also Phantoms in the air defence role, eventually comprising over half of the RAF's front line.

For the Luftwaffe, the Tornado will replace F-104 Starfighters in the counter-air, battlefield and interdiction roles, while in the German Navy it will also replace F-104s. For the Italian Air Force, the Tornado will replace F-104s in the primary roles of air superiority, reconaissance and support of land and naval operations.

The Tornado is being built by a three-nation consortium, called Panavia, which comprises British Aerospace, Messerschmitt - Bolkow - Blohm in West Germany, and Aeritalia of Italy. The RB-199 engines for the aircraft are being built by another group, Turbo-Union, comprising Rolls - Royce, Motoren-und-Turbinen Union of West Germany, and Fiat of Italy.

Tornado has been entered by Panavia in the contest to find a new tactical aircraft for the U.S. Air Force—a requirement for what is called an "Enhanced Tactical Fighter" or ETF for the mid-1980s. Panavia's partner in this is the U.S. company, Grumman Aerospace, which builds the F-14 Tomcat fighter. Tornado's chances can be considered promising, for the USAF deputy chief of staff has already flown the aircraft and has said that Tornado has "a very high degree of evolutionary development based on what we have to put together—terrain avoidance radar, terrain-following radar, the swing-wing and its ability to reduce the gust-loading on the aircraft at high speed, which is very effective."



The latest strike fighter in the U.S. inventory is the F/A-18 Hornet, for the U.S. Navy and Marine Corps, now in production by McDonnell Douglas at St. Louis, Missouri, with an intended total output of 811 aircraft. Northrop, of Hawthorne, California, is the major sub-contractor to McDonnell Douglas, undertaking 30 per cent of the airframe development work and 40 per cent of the airframe production work. The Hornet will replace two naval aircraft, the F-4 Phantom, and the A-7 Corsair attack aircraft.

For the RAF, another major new aircraft programme is now being planned. This is the eventual Harrier-Jaguar replacement, for a high-speed battlefield tactical support aircraft. Currently known as Air Staff Target 403 (AST-403), much work has been done on the preliminary design in the UK. But in view of the expense of such a programme, major efforts are now being made to try to find partners for the programme on the Continent, primarily in France and Western Germany. If those countries do have corresponding time-scales for the supply of a new tactical aircraft and are willing to participate in a major international programme (and both France and West Germany have ideas for new aircraft of their own) then the design so far developed for the AST-403, which is believed to include short take-off and landing (STOL) as well as swinging-wings, may have to be modified to accommodate the other countries' ideas.

Thus, it may be some time before any final decisions are taken on the AST-403 programme, and there is no guarantee at this stage that it will be developed at all, at least in the form as it has evolved so far. But that some such new tactical combat aircraft will be required in Western Europe is generally accepted, and the only alternative to indigenous manufacture will be to buy an aircraft from the U.S., which none of the aerospace industries of Western Europe really want to see happen. Thus, there is already a wide measure of agreement in Europe at industry level on the need for a common design.

If a Western Europe design is eventually built, it seems likely that the task will be given to the existing Panavia combine, which was set up to undertake Tornado design development and production. This joint company perhaps could even be widened to include representatives from the aerospace industries of other countries that might participate. It would seem to be unnecessary to set up new, rival machinery to undertake a task for which Panavia is already eminently suited.

Meanwhile, British Aerospace has several other major military aircraft programmes in hand. The Hawk trainer is doing well, with over 100 aircraft (out of an order for 176) already delivered to the RAF and a follow-on order likely soon. The search for overseas orders to support those already won from Finland (50 aircraft), from an east African country, and from Indonesia, continues.

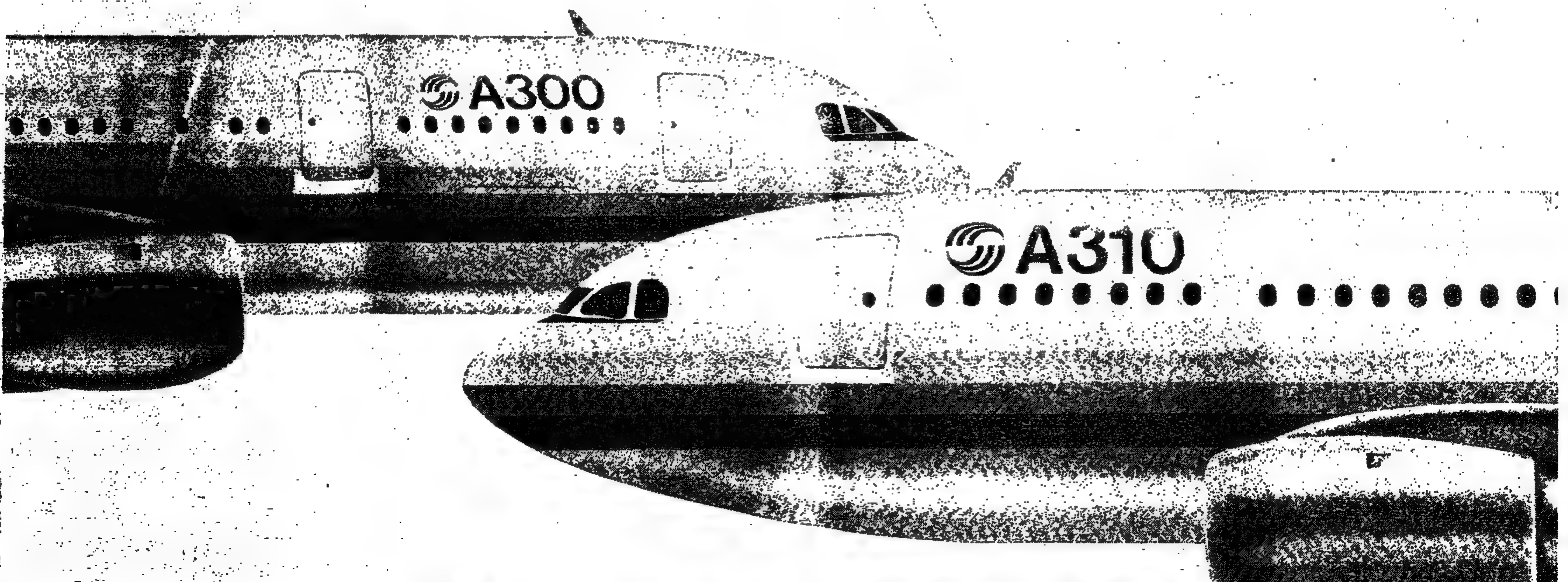
Trainer

The Hawk is also being studied as a possible trainer for the U.S. Navy. This would involve modifying the aircraft for carrier-borne use, and the Kingston-Brough division of BAe is working on this. Called the VTX-TS, the U.S. Navy is expected to issue a further "Request for Proposals" later this summer, in which BAe is expected to submit the modified Hawk.

Work on the Harrier vertical take-off and landing aircraft continues. Orders to date amount to 263 aircraft, plus another 35 Sea Harriers, and modifications to the aircraft for use through the 1980s include fitting a new wing to improve performance and weapons loads. The first of the Sea Harrier version is due for delivery to the Navy in June, and negotiations with India for an initial purchase have reached an advanced stage. The "Ski Jump," a device which enables Harriers to become airborne much more swiftly, and to carry bigger weapons loads, is attracting much attention world-wide.

In the U.S., approval has been given for the development stage of the Advanced AV-8B Harrier (two YAV-8Bs modified from UK-built AV-8As), but fiscal 1980 funding for full-scale development is still being debated in Congress.

M.D.



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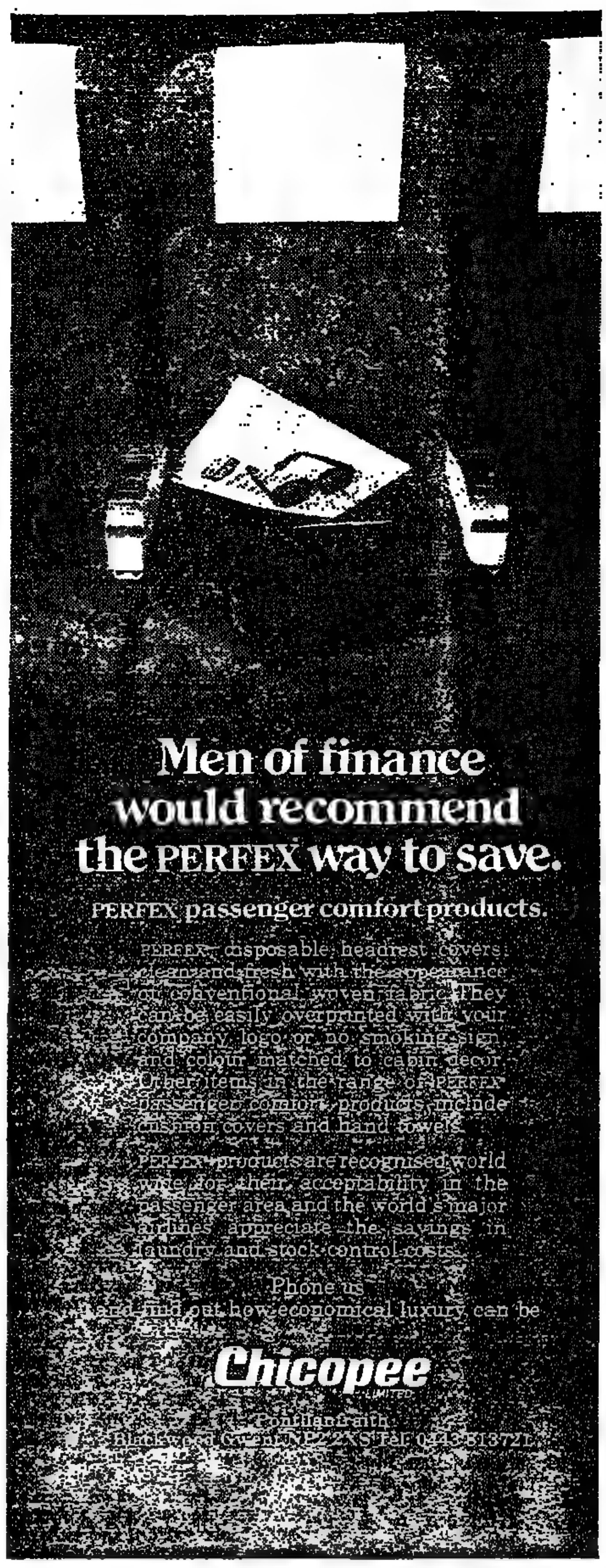

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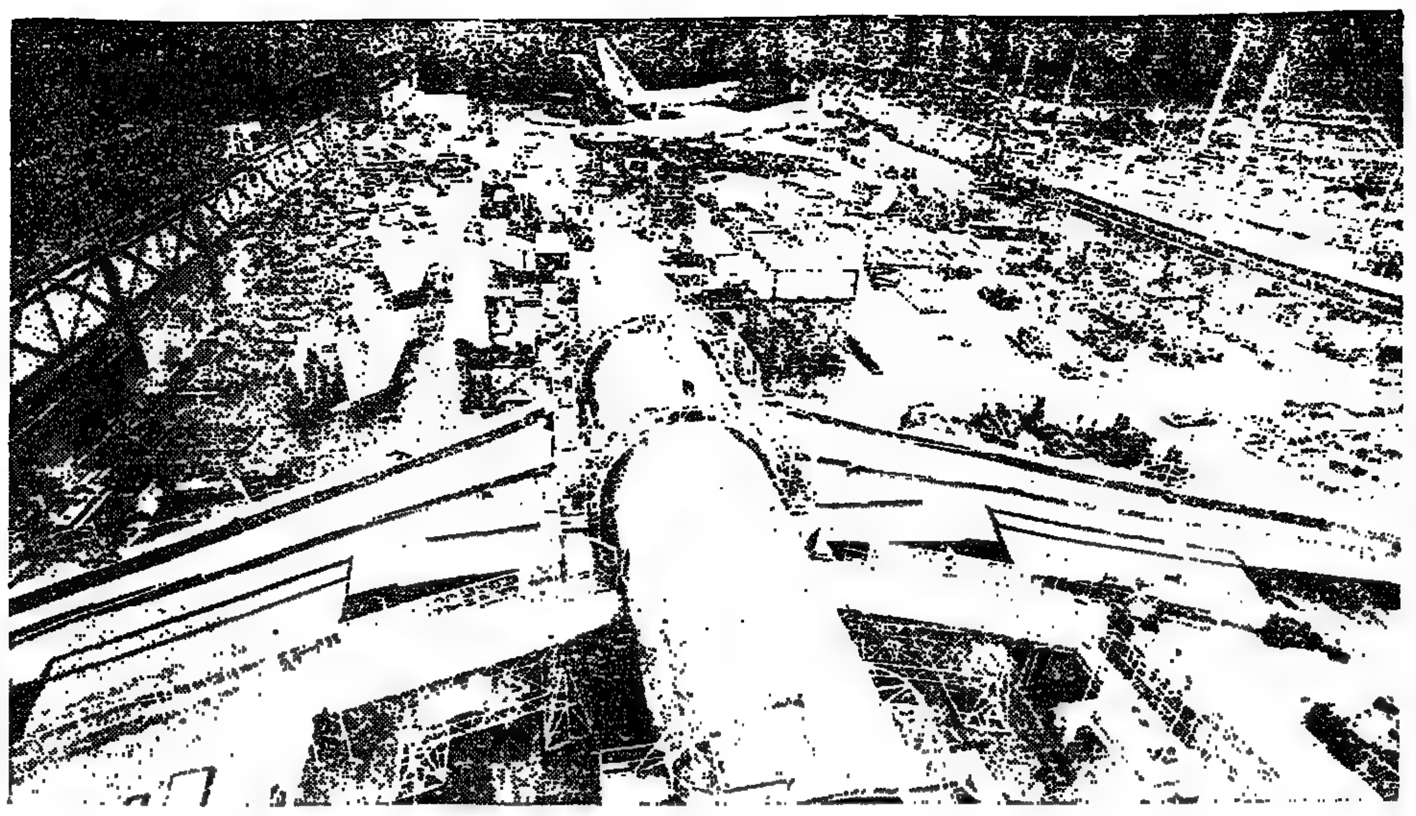
Growing share for equipment

WORLD MARKETS for aerospace equipment and systems, in the air and on the ground, have reached such proportions that they are now more important creators of employment and spin-off technology than the airframe industry itself.

In Britain, which has Europe's largest aerospace industry, only 15,000 employees out of the industry's total of 80,000 employees work directly in airframe construction. The rest find their rewards in the manufacture of parts, equipment, and components of all kinds, as well as in engine manufacture.

A similar proportional breakdown seems likely in other European and U.S. aerospace industries. In terms of value, equipment manufacture now ranks roughly equal with engines and airframes as a contribution to the cost of a completed aircraft. In addition, there is the growing world market for ground operations equipment.



Aseembly of 747s at Boeing's Everett. Washington, plant sums up the mass of components involved in aircraft manufacture

A total of over £60bn is expected to be spent across the total world market for civil aircraft maintenance, equipment and parts (both for scheduled airlines and general aviation), air traffic control systems and airport ground handling equipment in the decade to 1988, according to estimates by the International Civil Aviation Organisation.

The figure does not include spending on military aircraft, equipment and systems, but total estimates in this sector are rather more difficult to quantify.

A high proportion of new equipment destined for these aircraft has been designed with a firm eye on low weight and compact design. This applies to military aircraft as well as civil aircraft. In all new aircraft the design is dominated by the need for vital size and weight reductions on all types of equipment.

The miniaturisation which has resulted from advances in electronics in all fields has been of particular benefit to aircraft designers. This has opened the way for even small aircraft to be fitted with advanced avionics (aircraft electronics).

One of the most useful advances for small aircraft is the lightweight weather radar system developed by RCA. The antenna and much of the electronic heart of the system, known as the Weather-Scout I, is designed to fit into the leading edge of the wing of small aircraft. The radar gives warnings of nearby storms and thunder clouds without the penalty of a high drag-inducing radar pod. The novel design is thought to be one of the most revolutionary weather radars to enter mass production and is now being demonstrated on a Piper Lance II aircraft.

The RCA Avionics company has recently produced new designs for its weather radar range. The Primus 200 Color-Radar has a range of 200 miles and will alert the pilot to problems ahead.

Britain has a wealth of radar design and manufacturing experience and many new systems will be on display at Paris. Cossor Electronics, of Harlow, Essex, has designed a secondary radar system for airports which was announced earlier this year after an 18-month trial.

The ADSEL system is said to be one of the first secondary radar systems to have the capability of interrogating and identifying, selectively, every aircraft within its range. Cossor Electronics designed the system in conjunction with the Civil Aviation Authority and the Royal Signals and Radar Establishment.

The system is now fully operational at the Matching Green experimental station, and four British Midlands Airways' aircraft have been fitted with Cossor equipment. Operational trials using scheduled flights have already started.

In the military sphere, two British radar companies, Marconi and Plessey, have agreed to form a new UK company, UKADGE Systems, with Hughes Aircraft of the US, in an attempt to win part of the equipment contracts for improving Britain's air defences.

The joint company will submit proposals this year and the final award of the UKADGE (United Kingdom Air Defence Ground Environment) contract is expected to be announced by the Ministry of Defence in the first quarter of next year.

Exhibit

Marconi Avionics, a member of the GEC-Marconi Electronics group, is to exhibit at the Paris Air Show a model of the new advanced interception radar for the Air Defence Variant of the European Tornado Combat aircraft, which Britain plans to use in addition to the basic strike versions of the aircraft.

A fuel flowmeter based on *microprocessor technology* has also been developed by the company for use in the British Aerospace Hawk jet trainer aircraft. This will also be displayed at Paris, alongside a foldaway head-up display the company has developed from its military experience for use in civil airliners.

The increasingly vital area of fuel management for commercial aircraft will feature at *Smiths Industries'* stand at the Paris Air Show. The company has developed a digital fuel management system, and animated displays will explain full details of flight operations. The company's STS-10 autothrottle system is already in service on the Boeing 727 and 737 and is designed to provide optimum thrusts over all flight sectors.

Allied to fuel management technology is the field of hydraulics systems for aircraft and a range of systems are expected to be displayed at Paris, including equipment on the Pilatus Britten - Norman Islander and Trislander aircraft—which are now approaching a landmark in British light aviation with their 1,000th aircraft sale. Fairey Hydraulics of Heston, Middlesex, has been associated with the aircraft for many years and this company announced before the Paris show that it had won orders worth over £600,000 for landing gear shock absorber struts for the Islander and Trislander.

Another vital area of aircraft equipment is fire fighting equipment. *Britain has a number of* companies representing this field, and last month Wilkinson Match Group, which owns Graviner, one of the market leaders in fire protection equipment, announced a significant expansion in this field.

Wilkinson Match acquired—jointly with Allegheny Ludlum Industries of the U.S.—HTL Industries of Arcadia, California.

HTL is one of the world's foremost fire extinguishing equipment manufacturers. Under the new arrangement, the company will pool its expertise with that of Graviner to bid for major new U.S. civil and military contracts in aircraft fire protection. Outside the U.S., Graviner and HTL will continue to operate separate and parallel sales and distribution organisations. But inside the U.S., the two companies plan to bid for contracts for fire *detection and extinguishing* systems on the new generation of Boeing 757 and 767 airliners and other aircraft.

Fire prevention is also a major source of work for companies supplying equipment for use at airports and in fue storage areas. The Fire Vehicle Division of Chubb Fire Security of Middlesex, designs, manufactures and markets specialis high performance airfield cras trucks. These are used by civi and military aircraft authorities in 45 countries, part of world market which Chubb ha estimated to be worth £35m year.

The main areas of the worl where demand for crash truck has been expanding over th last three years include th *Middle East and Africa.* Las year these zones accounted fo over half and almost a quarte respectively of Britain exports of these vehicles.

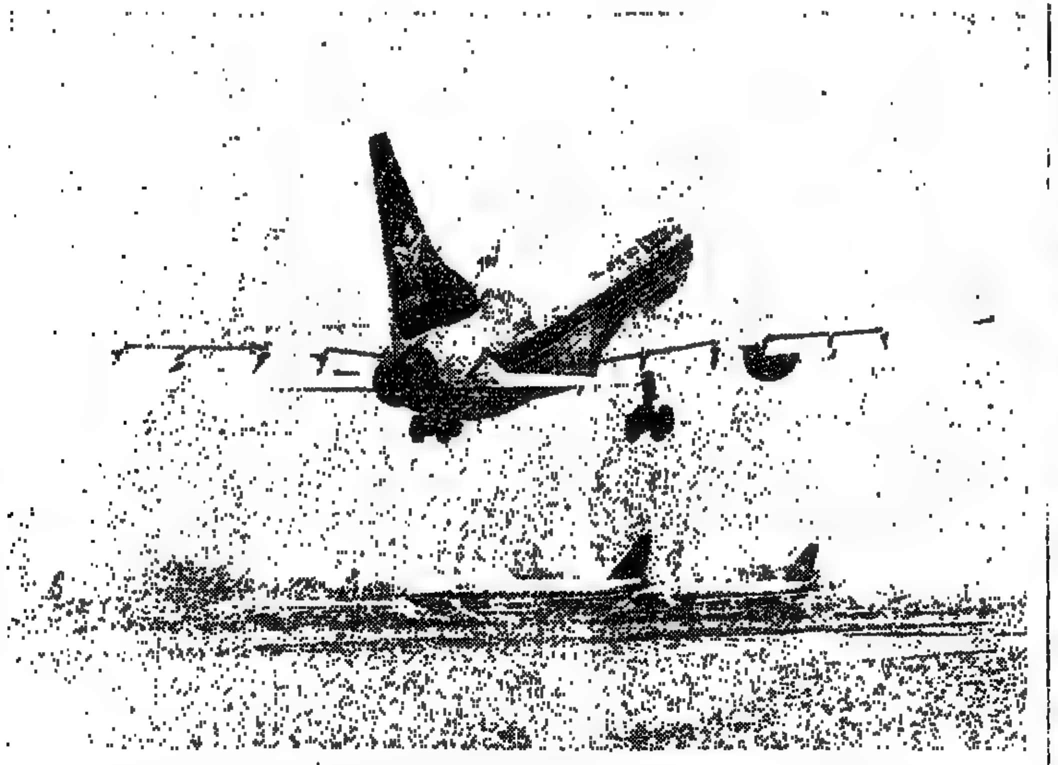
Airport equipment of all typ is a rapidly growing part of th aerospace equipment industry output. Britain's Nation Economic Development Counc (NEDC) believes the rewar from the airport equipme market are potentially so gre that steps have been taken develop a national catalogue British airport products. Th will be published by the Brit Overseas Trade Board, t British Airports Authority a the Civil Aviation Authority.

The idea arose out of "Design and Export" rep from the Civil Engineeri Economic Development Co mittee, part of NEDO, whi was published two years a The report outlined the impo ance of overseas airport co tracts for Britain's civil en neering companies.

The catalogue is expected be ready in its first edition next year's Farnborough Show.

The prize is enormous. T International Civil Aviat Organisation has estimated t total airport construction a maintenance contracts will worth over £6bn between n and 1988. In addition there likely to be a need for wo air traffic control systems wo up to nearly another £6bn this includes only a third of estimated £1.5bn' expenditu forecast by ICAO for imp menting the new microw landing systems. Airport grou handling systems will another £2.4bn to the bill developing the world's new *existing airports into the* to late 1980s.

Lynton McLa



Jeddah Airport, in Saudi Arabia, is rapidly developing into one of the busiest airports in the Middle East. A Lockheed TriStar airliner of Saudia, the Saudi Arabian flag airline, is seen taking off against a background of Boeing 747 Jumbo jets and Boeing 707s

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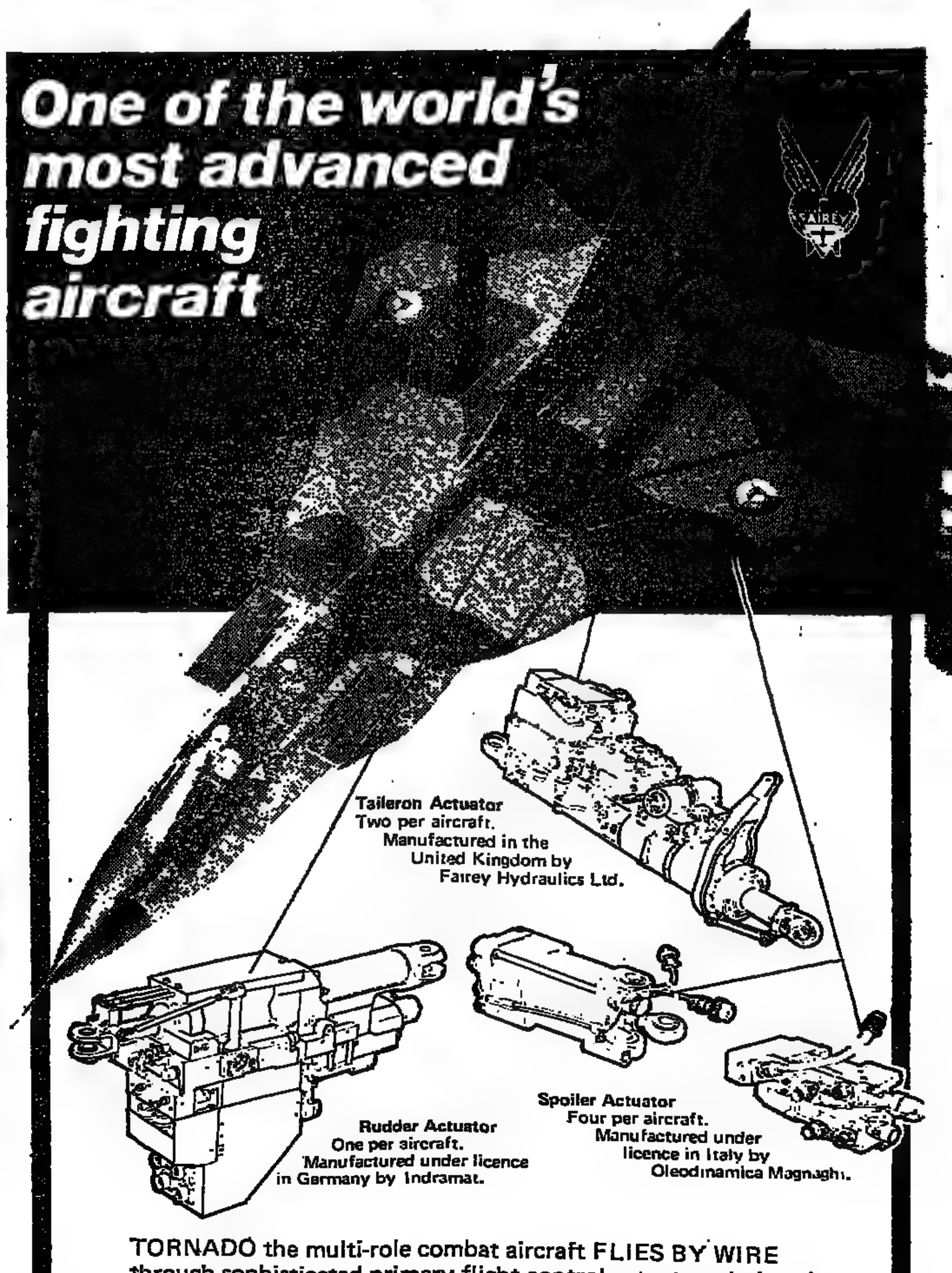

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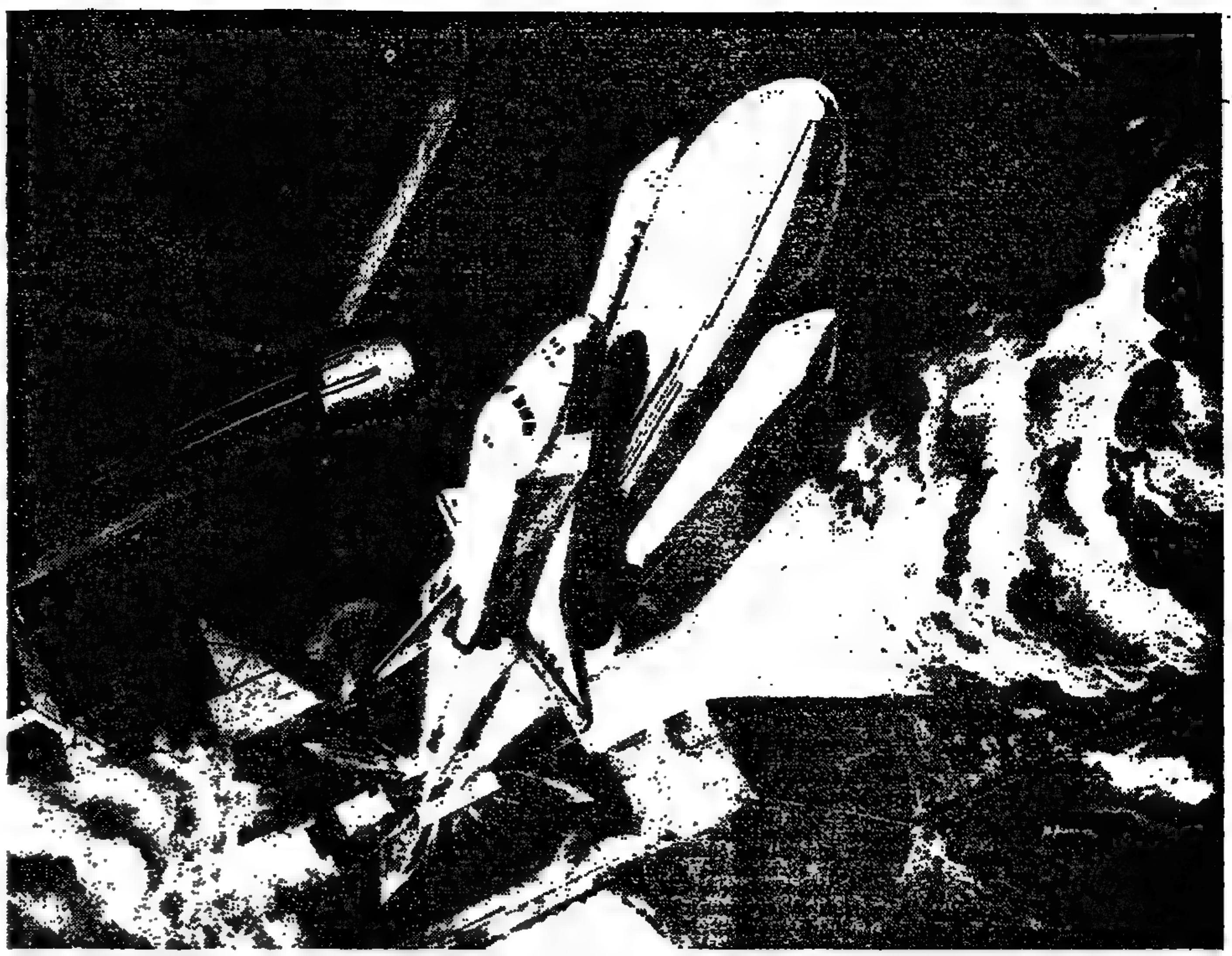
Satellites pay their way



An artist's impression of how the Space Shuttle will look when being blasted off from the Kennedy Space Centre in Florida. The Orbiter manned vehicle (left) is carried on the back of the combination of the big Booster rockets and additional fuel tank.

THE MOST significant trend in space research world-wide is the increasing emphasis on making this expensive arena of activity earn its living. Thus there is a growing use of unmanned near-Earth orbiting satellites, both for scientific purposes and for a widening variety of direct applications in the service of man.

The unmanned satellite in fact promises to become one of the most vaulable tools ever invented. It is estimated that the use of satellites for a wide variety of tasks, including communications, weather forecasting, environmental observation and earth-resources monitoring, is already saving industry large sums a year.

A study by the U.S. National Oceanic and Atmospheric Administration (NOAA), for example, shows that satellite observations of the Earth's atmosphere and surface are saving industries and government $172m a year in the U.S. alone, while this could probably be multiplied several times if similar savings elsewhere in the world are taken into account.

Beneficiary

The NOAA suggests that the U.S. agricultural industry may be the biggest beneficiary, by showing, for example, the progress of crop-killing frosts during winter nights, thus helping agriculturalists to know when to turn on heating systems. The Hawaiian sugar cane industry uses satellite data in its crop management, while other agricultural sectors are finding increasingly that the short-term data available from satellites is especially valuable in helping to protect perishable commodities that require precise production techniques.

The marine industries are also benefiting considerably. The Gulf of Mexico and Atlantic shipping interests are finding that satellite data can locate the constantly changing position of currents such as the Gulf Stream, enabling ships to make faster voyages. The Exxon oil group alone estimates that the use of such data for navigation can save its tanker fleet up to $360,000 in fuel a year. Fishermen in the Pacific use satellite data on the "heat boundaries" in the ocean to detect fish shoals, thereby improving catches to the sum of over $2m a year. The U.S. Coast Guard saves $5m a year in reduced aircraft flight hours by using satellite data.

In weather forecasting, hurricane observations, local and global weather forecasting, and other meteorological uses, satellites are not only saving many human lives, but probably also resulting in hidden savings of billions of dollars in industry and the community at large.

In telecommunications, the satellite is now an accepted and proven means of international telephone, TV and data facsimile transmission of incalculable value to the world business community. Communications via satellite, in fact, is not only increasing in volume annually, but decreasing in real cost. Intelsat (the International Telecommunications Satellite Organisation), which runs the global communications satellite network, has cut its monthly charge for a full-time, two-way telephone circuit by 16 per cent, to $960. The same service in 1965 initially cost $5,334. If that charge had risen with inflation, the cost today would have been about $11,000. Intelsat, which includes more than 100 nations, has in fact lowered its rates for nine consecutive years.

It is because of this increasing emphasis on the unmanned Earth satellite for an ever-widening variety of uses that particular emphasis is now being placed upon methods of launching them. In the U.S., the National Aeronautics and Space Administration (NASA), which has traditionally used the booster rocket to place satellites in orbit, is now well down the road towards first operational orbital flight early next year of its Manned Re-usable Space Transportation System—known as the Space Shuttle.

This system comprises an "Orbiter" vehicle, the size of a small airliner (the first of which is called Columbia), which will be sent into orbit by two "Booster" rockets. The Orbiter will carry a small flight crew and a small team of scientists or other astronauts. Both Orbiter and Boosters are designed for recovery and refurbishing for future use—each Orbiter is designed for 100 space missions, and each Booster for 20 missions. The Boosters will fall into the ocean for recovery and shipment back to the Kennedy Space Centre in Florida, while the Orbiter vehicle will fly back into the Earth's atmosphere on completion of a given mission (such as placing a satellite in orbit) to land at the Kennedy Space Centre like an ordinary airliner.

Launching

The aim of this system is to provide a frequently usable, and therefore hopefully cheaper, system of satellite launching. The Orbiter will have a cargo bay containing satellites or other payloads for scientific or other experiments in space.

In Europe, however, the European Space Agency (ESA), which is the Government-sponsored body representing most countries of Western Europe, is devoting much of its time and resources to development of the more conventional rocket launching system, the Ariane, as an independent system, an insurance measure against any possible failure of the Shuttle to meet the claims made for it in the U.S. Work on the Ariane has been under way for some time both in Europe and at the ESA's launching base at Kourou, French Guiana. The first live Ariane will be launched later this year, but already the ESA is contracting for payloads for the first handful of launches, including various scientific telecommunications and other satellites.

In addition to the Ariane, however, the ESA is working on the Spacelab, a manned orbital workshop that will be Europe's major contribution to the U.S. Space Shuttle.

Designed to fit into the cargo bay of the Shuttle Orbiter vehicle, the Spacelab will enable scientists to work in shirt-sleeve comfort in space on a wide variety of missions. While in effect Europe's contribution to the Shuttle, it is really more than that, since it will give European scientists, and industry, a chance of gaining experience of manned orbital space flight that they would not otherwise get, since Europe is not itself developing any other manned orbital vehicle.

But although much of the emphasis is now on satellites and their launching systems, the other widely varied aspects of space research are not being ignored. While out of 16 launches on the NASA schedule for this year, most are for earth-orbiting satellites for scientific research and application technology purposes, the Administration has some other notable space activities in hand.

These include the Jupiter and Saturn planetary encounters by two Voyager spacecraft, and a fly-by of the Rings of Saturn by the Pioneer Eleven spacecraft.

The Voyager I spacecraft, launched from Earth on September 5, 1977, made its closest approach to Jupiter in early March, and is now travelling on to make a close approach to Saturn on November 12, 1980. Its sister spacecraft, Voyager 2, launched on August 20, 1977, makes its closest approach to Jupiter on July 9, this year, and will go on to Saturn, reaching that planet on August 27, 1981. The Pioneer Eleven spacecraft, launched on April 6, 1973, on a primary mission to fly-by Jupiter, is scheduled to make its closest approach to the Rings of Saturn on September 1, this year.

The NASA programme of launches this year includes a number of research and other satellites for the U.S. Defence Department, but others of significance include the UK-6 scientific satellite, to be launched on a Scout vehicle from Wallops Island, Virginia, early this month; the Westar-C communications satellite, to be launched from Cape Canaveral in July, and two other communications satellites, Intelsat V-A and V-B, both for the U.S. Communications Satellite Corporation which manages the global system for Intelsat.

A U.S. domestic communications satellite for RCA is due to be launched in December, but prior to that there will be several launches of scientific satellites, including the High Energy Astronomy Observatory-C (HEAO-C) in September; Magsat-A, a magnetic field research satellite, in September; the Solar Maximum Mission satellite in October; and a Weather satellite, NOAA-B, for the National Oceanic and Atmospheric Administration, in December. Looking much further ahead NASA and the ESA have signed an agreement for a joint International Solar Power Mission in 1983, to observe the sun for the first time from above its Polar regions.

Of particular significance in Europe will be the ESA's forthcoming launch in late 1981 of the first European Communications Satellite (ECS), designed to provide Europe with a fully-operational "Regional" communications satellite system to provide telephone, telex, TV and data transmission links. A second satellite will be launched in 1982. An agreement on the provision of two ECS spacecraft has been signed between the ESA and Interim Eutelsat, an organisation comprising the telecommunications administrations of 17 European countries, but eventually five satellites will be required to meet the system's long-term requirements.

Maritime

A new organisation, the International Maritime Satellite Organisation, is now being set up to operate a global maritime satellite communications system enabling ships world-wide to communicate with shore-based offices much more easily than ever before. Countries participating include the U.S., UK, Soviet Union, Norway, Japan, Spain, Australia, India, New Zealand and Egypt. One of the first tasks will be to select the satellites, the candidates for which are Intelsat 5, MARECS, developed by the European Space Agency, and the U.S. Comsat General Corporation's Marisat, which is already operational, having been used by the Navy for some time.

One of the special developments now occurring in space is the growing interest shown in satellites of various kinds by developing countries in the Third World—the so-called "Regional Satellites" for a wide variety of tasks, but primarily communications. The British Aerospace Dynamics Group, for example, has put forward a plan for a communications satellite to meet the needs of the rapidly developing Arab States—Arabsat. This would be based on the European Communications Satellite, for which the Dynamics Group is already the prime contractor to the ESA.

This kind of "Regional Satellite" is becoming possible at a reasonable price because of the rapidly improving technology in unmanned satellites. This has reached the state where the satellite itself has become virtually a "bus" type of vehicle of standard basic design, into which a widening variety of payloads for different tasks can be fitted. As a result, there is intensifying competition throughout the world among the major satellite manufacturers, including British Aerospace, to win this kind of contract from the developing countries.

Finally, considerable interest is now being shown, especially by British Aerospace, in the provision of solar power satellites. Studies have shown that such satellites could be developed by an extension of existing technological knowledge, while the investment needed would be comparable with that required for other major power sources. Such satellites, if developed now, could be producing electricity for consumption on Earth at competitive prices by the turn of the century. The satellites would receive energy from the sun via large arrays of photoelectric cells, converting onboard into microwave radio energy, and beam it towards large receiving antennaes on the Earth's surface.

M.D.

Thinking for tomorrow got us where we are today

Today Cossor Electronics is a well established supplier of electronic equipment for the defence industry, public authorities and airlines.

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Cossor displays at Gatwick Airport.

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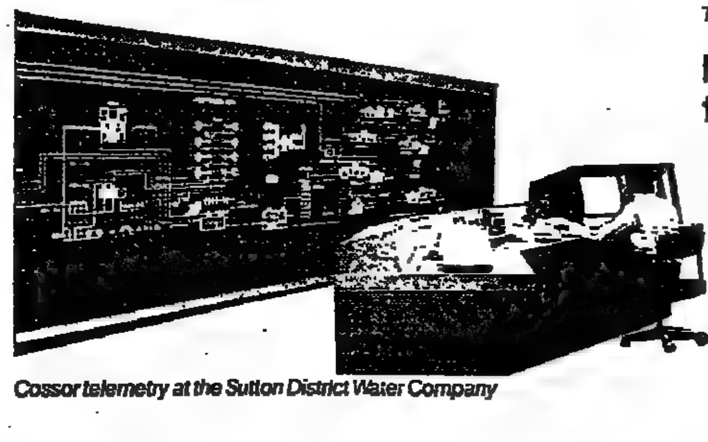

Cossor telemetry at the Sutton District Water Company

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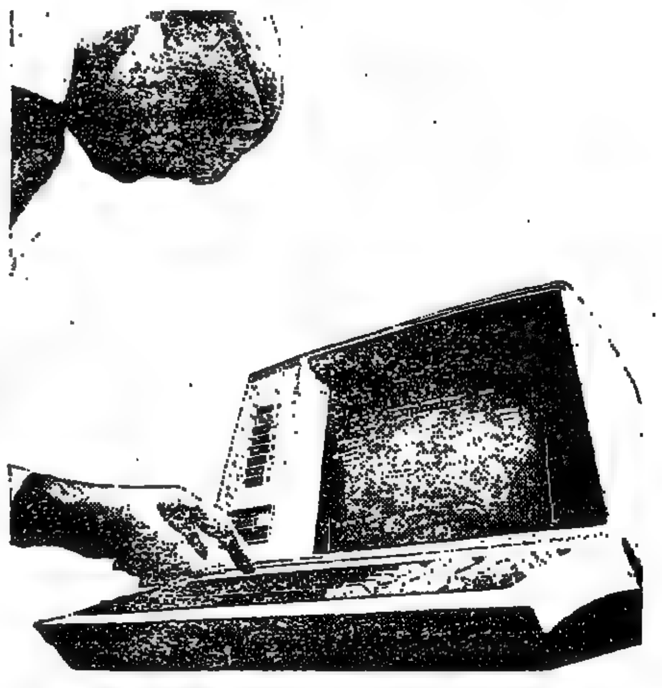

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The U.S.-built Beechcraft King Air is a typical example of a twin-engined cabin monoplane used extensively by companies for the transport of executives in the U.S., Western Europe and elsewhere.

BUSINESS AVIATION — the use by business executives or companies of private aircraft in place of regularly scheduled airline services — has been expanding rapidly in the past few years throughout the world, especially in the U.S. and Western Europe, and seems likely to continue to grow, despite the parallel growth of scheduled airline activities.

While undoubtedly in recent years the regular airlines have made some considerable efforts to woo the business traveller, who still accounts for more than half of their traffic, more and more businessmen are discovering the delights and benefits of having their own aircraft at their disposal.

The reasons are not far to seek. In many cases, the regular airlines' schedules, while expanding, remain for many businessmen inflexible, whilst delays at airports arising from growing congestion have also left many businessmen feeling frustrated and angry.

There has also been a mounting resentment at the way in which the business traveller has been left behind by many scheduled airlines in favour of the cheap fare travellers.

The latter in recent years have been enjoying on many flights the same standards of comfort and convenience and cabin service as businessmen paying much higher fares. The result has been a belated attempt by the airlines to improve the lot of the business traveller, with special cabins and other frills, and these have undoubtedly helped to generate more business travel. But for many, the trend towards the greater exclusivity, and the freedom from noise, bustle, pressure and waste of time, that come from private or corporate aircraft, is irreversible.

Links

In addition to these personal motivations, the reasons for the growth of business aviation also include the growth of international links by many companies, necessitating speedier communications between sometimes remote factory or office locations. There is also, surprisingly to many businessmen, a considerable saving in money as well as time—using one's own aircraft, fixed-wing or helicopter, it is often possible to conduct in one day business in several different places that would otherwise require two or three days if the scheduled airlines were used instead, and involve hotel and meal bills which in many places can now be very expensive. Where an executive's time means money—as in most cases it does—the benefits of a private aircraft thus become much more apparent.

The result is that while many businessmen will continue to use the scheduled airlines, the business aircraft manufacturers and the growing number of companies providing aircraft on an ad hoc charter basis have never been doing so well.

It has been estimated that in the current year, for example, the U.S. manufacturers of business and light aircraft of all kinds (collectively known as "general aviation") will sell close to 18,200 aircraft, worth over $2bn. While many of these aircraft will be light single-engined aircraft for the leisure and sporting flying market (more than 13,000), with a substantial number also going for agricultural aviation of various kinds, there will still be a substantial number of aircraft being acquired for business aviation—about 548 multi-engined turbo-prop aircraft, worth close to $400m, and about 231 turbo-jets, worth close to $380m.

Figures for sales in other parts of the world are not available, but most reports suggest that the upsurge in sales and use of business aircraft in the U.S. is being paralleled in Western Europe (including the UK), in the Middle East and Australasia, and to a lesser extent in other parts of the world.

If the entire "general aviation" market as a whole is taken into account, it is estimated that world-wide, the sales of general aviation aircraft up to 1988 will amount to close to £14.8bn, of which perhaps one-third by value will be business aircraft of various kinds.

One of the factors tending to promote the use of business aircraft is the current fuel shortage and the rapidly rising price of aviation gasoline. It is claimed that general aviation aircraft tend to use less fuel per seat mile than many of the biggest jetliners, so that whereas fares on scheduled airlines will tend to rise the cost of business flying in smaller, privately-owned aircraft will rise at a slower rate. A 400-seat Boeing 747 Jumbo, for example, averages 40 seat-miles per gallon, but a six-passenger Piper Lance averages 75 seat-miles per gallon, while the six-seat Beechcraft Bonanza gets 72 seat-miles per gallon, as does the seven-seat Cessna 207.

The U.S. general aviation fleet consumes only 7½ per cent of all the aviation fuel consumed in that country, while the airlines consume 69 per cent, military aviation accounting for the rest. As a result, current fuel shortages are not likely to be a serious constraint upon the growth of business aviation, although shortages are occurring and will continue to do so.

Faster

In fact, top officials of the U.S. General Aviation Manufacturers' Association believe that business aircraft deliveries will continue at a steady rate, and may even rise at a faster rate than in the recent past. Piper, one of the "Big Three" manufacturers (the others being Cessna and Beech) in the U.S. says: "Our sales indicate that, every year, more and more businessmen are electing to add a general aviation aircraft to their list of business tools."

In terms of numbers, this indicates that by the late 1980s, the world inventory of general aviation aircraft could be in the region of 300,000 aircraft, of which turbine-powered aircraft, mostly for business use, could number 12,000 to 15,000. While the U.S. manufacturers will continue to dominate the scene, the other manufacturers will also expand—British Aerospace with its 125 series of business jets, Aérospatiale and Dassault-Breguet in France, Israel Aircraft Industries Embraer of Brazil and Mitsubishi of Japan, to name but a few of the growing band of business aircraft manufacturers.

The number of different types of aircraft available to the businessman or company is vast—more than 100 models of all kinds are available, ranging from single-engined two-seaters up to multi-engined "flying boardrooms," both turbo-propeller or jet powered. While the initial cost in black-and-white on paper may appear to be prohibitive, and the operating cost perhaps frightening, careful examination of the overall costs of all business travel by a particular company will often show that it is cheaper in the long run to invest in a corporate aircraft than to go on paying large sums in scheduled air fares and overnight hotel and meal costs.

The secret is to ensure that the corporate aircraft is just that—available for use by everybody in the company who has a genuine reason to use it, whether it be to fly out to sign a contract or to carry spare parts urgently needed somewhere down the line. The big mistake is to buy an aircraft for prestige, or for use as a "chairman's toy."

The second mistake is to buy the wrong type of aircraft. Finding the right kind of aircraft is essentially a task for the specialist—the aircraft broker or aviation consultant who is able to prepare a detailed cost-benefit analysis of the company's aviation activities in the course of any one year, and relate it to the type of aircraft best suited to the would-be purchaser's requirements.

Most emphatically, buying a corporate aircraft is not "just like buying a company car"—the knowledge required is highly specialised, and a few hundred pounds spent on an initial specialist adviser's fee is often the means of saving many thousands of pounds over the ensuing years. Many such specialists exist in the UK—their names can be found in the advertisement columns of the specialist aeronautical journals every week.

There are also the bigger specialist organisations, such as the Business Aircraft Users' Association and the General Aviation Manufacturers' and Traders' Association in the UK, both of whom are ready and willing to help would-be business aircraft buyers and fliers on finding the best aircraft for them, and on how to gain such benefits as tax reliefs on their investment, as well as how to find crews, maintenance and engineering facilities, and other operational data.

For the would-be business aviator who does not want to buy his own aircraft, the Air Taxi Operators' Association, which has more than 40 members, is available to advise on the hiring of aircraft of all kinds for ad hoc operations, while the British Helicopter Advisory Board performs a similar service for those interested in rotary-winged aircraft.

A few days or weeks spent in this kind of preliminary analysis and discussion can ensure that the newcomer to business aviation remains a happy and profitable aviator, and does not become an unhappy, disgruntled and disillusioned experimenter who is out of pocket. It is a constant source of wonderment to many in aviation that some businessmen or companies move into aviation without adequate preliminary analysis, and are obliged to quit in dismay.

On the other hand, the disillusioned are heavily outnumbered by those who, having studied their needs carefully, with the proper advice, have made the right choice, and have discovered that the aeroplane is not only a useful tool of management, but also a source of profitable growth into wider physical and commercial horizons.

M.D.

Mixed fortunes for the pleasure flier

THIS YEAR has been one of mixed fortunes for the pleasure fliers of Europe. Rising fuel costs look set to hit their pockets at a time when the price of new light aircraft shows few signs of levelling-off.

However, such developments may be offset by an equally rising tide of competitiveness among manufacturers as they take advantage of new equipment, new production techniques and licensed production away from the home base.

Perhaps the best example of this came earlier this year. Short Brothers, the Belfast-based aerospace company, signed an agreement in April with the Piper Aircraft Corporation of Pennsylvania in the U.S., for the production in Northern Ireland of the Tomahawk light trainer aircraft. The move is certain to give a major boost to light aviation in Britain and on the Continent, where light aircraft production has consistently lagged behind the U.S. with its vast distances and ready market.

The development is an important landmark for Short Brothers, as the new venture marks the successful conclusion of the company's second bid to enter the light aircraft production business.

The company attempted to acquire the Britten-Norman (Bembridge) company and the Islander and Trislander aircraft assets of the Fairey Group in August 1977. The bid was rejected by the Fairey receiver three months later, and the assets were taken over by the Swiss Pilatus aircraft company last year. But now that production of the Tomahawk in Belfast is assured, sports and leisure fliers stand to benefit from the local output almost immediately.

The aircraft has been an enormous success in the U.S. Sales topped 1,400 in the first 15 months of production and when production starts in Belfast later this summer, the aircraft stands to attract the same level of enthusiasm in Europe.

Tomahawks have already been sold in Europe through the CSE Aviation organisation. The company assembled the aircraft after they had been completed, certified and then disassembled in the U.S. for shipping. But two aircraft in their semi-assembled form were all that could be squeezed into a standard shipboard container. Under the agreement with Short Brothers, Shorts will bring in all the parts needed for 10 complete Tomahawks—about a month's production—in a single container.

These will then be assembled at the Belfast factory.

The production savings from the increased efficiency of freighting are expected to be up to £1,000 per aircraft, which sells for around £8,000 at the moment.

How much of this will be passed to the customer remains a matter for Shorts and for the sales agents. But both companies are confident that the Tomahawk will become a familiar sight on the flying fields of Europe, in close competition with the Cessna 152, thought to be one of the Piper aircraft's main competitors.

Cessna has a very impressive range of light and general aviation aircraft. Its current range includes 34 basic models from the competitively priced Cessna 152 at around the £8,500 price level, to the £1.7m long-range version of the Citation III.

The aircraft are designed for sports, general aviation duties, passenger transit and business use. The company is tackled in the sports flying arena by other major U.S. companies, in particular Beechcraft, which offers 17 general aviation aircraft ranging from the £17,000 Beechcraft Sundowner 180, to the £410,000 King Air E90.

Many of the aircraft at the higher end of the price spectrum are designed with an eye on the needs of the business traveller and sales to companies account for a high proportion of business.

Efforts

Piper Aircraft Corporation has tended to concentrate its efforts on light aviation aircraft, although at the end of its range of 24 aircraft opposite the Tomahawk its boasts the £317,000 Cheyenne II for luxury business use.

The continued domination of the world's light aircraft industry by companies from the U.S. looks set to prevail throughout the 1980s. There is a growing challenge, however, from Europe, in particular from the French Aerospatiale company.

Aerospatiale offers 11 light and general aviation aircraft, again with an emphasis on business and executive transport at the higher price ranges up to £1.2m. At the other end of the price scale, the Rallye series of six aircraft has a wide appeal, particularly to flying clubs, wealthy individuals or fliers who make up for lack of money with enthusiasm.

But even the greatest enthusiasm for private flying must be expected to take a knock from the rises in the price of aviation fuel which have accompanied the general increase in oil prices this year. Transport users, aviators included, have been hit twice, or will be if the Transport Department's proposal to abolish excise duties on vehicles is enacted with the accompanying rise in tax on petrol, regardless of the form of transport involved.

The British General Aviation Manufacturers' and Traders' Association has been active, since the proposals were announced last year, in seeking changes which would exempt aviation from the petrol tax increases.

The increase may be around 20p per gallon of aviation fuel and although the idea is still only a proposal and may be changed by the new Government, the prospect has gingered the aviators to review current fuel consumption.

The association produced a seven page document analysing consumption and has suggested that the new tax would add an extra £3,000 a year to the operation of each of Britain's 330 piston-engined air taxis.

Britain's fleet of 130 light aircraft for agriculture use would pay an average of another £1,200 a year and helicopters for a similar role would pay another £1,650 a year.

The tax would also have a direct bearing on the costs of learning to fly. The association has put the extra cost of obtaining a commercial pilot's licence on an approved course at £500. Britain's 20,000 qualified private pilots would feel the affects and the rise in the costs of training would hit the 180 flying clubs, currently training up to 5,000 students a year.

But the growing band of fliers who take to the air for pleasure should take heart, for there are other ways of enjoying flight without the penalties of high fuel costs.

In Britain as many as 50,000 people fly for fun, in powered aircraft, in gliders, slung under hang-gliders, or suspended in hot air or helium balloons. Fear of the cost rather than fear of flying has traditionally put many people off flying and yet the costs may be comparable to other sports, such as sailing or even car ownership.

Gliding can lay claim to be the most elegant alternative to powered flight. The sport is growing at a steady 6 per cent per annum, according to the British Gliding Association. Gliding is equally popular in Europe, with West Germany and France regular competitors in international gliding contests.

The sport is now so popular in the South East of England that clubs have waiting lists. One factor is the shortage of land suitable for gliding operations. This needs to be under airspace cleared for gliding and as civil aviation becomes ever more popular new glider airfields have proved almost impossible to come by.

Over half of Britain's 100 gliding clubs offer week-long holiday courses for would-be pilots. It requires about 50 launches for the student to gain the experience needed to go solo and at around £5 an hour the total price is highly competitive with other sports.

But like other sports, particularly sailing, there are essential extras, including helmets, clothing and boots, which add to the cost.

Similar extras are needed for the growing sport of hang-gliding. The British Hang-Gliding Association, based in Somerset, estimates that there are now 5,000 adherents to the sport in Britain. In the U.S. the sport is almost commonplace and is no longer treated as a dangerous oddity. Nevertheless the risks for the badly trained flier must still be regarded as high.

There were a quarter of a million hang-glider flights recorded by the Association in Britain last year. Five people died in hang-gliding accidents compared with two in 1977.

Tests

The world hang-gliding championships are to be held at Grenoble, France, this year. Tests will include 360 degree turns and landing accuracy tests. The best distance covered so far in competition hang-gliding is 12½ miles achieved during a flight in Scotland, so the standard of competition can be expected to be high.

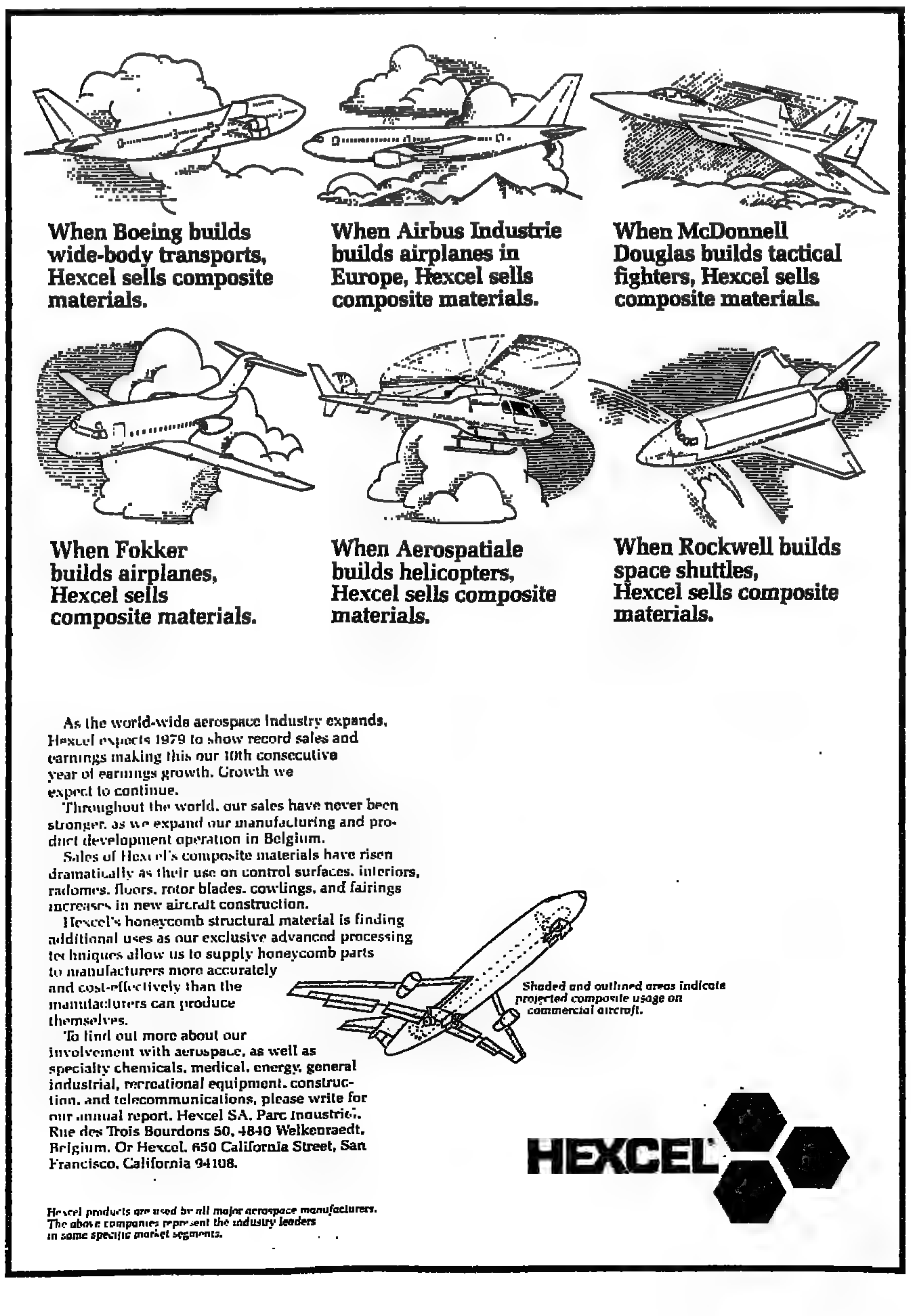
Success in the world championships could bring prestige and worldwide sales to the 13 British hang-glider makers, but there is tough competition in a world market worth £50m a year.

The low cost—less than £500—of hang gliding points to personal ownership of the fragile craft. Not so hot air ballooning, where syndicate ownership is almost a must for financial and practical reasons.

The balloons cannot be inflated without assistance and as the British Balloon and Airship Club tells prospective balloonists, like-minded enthusiasts are an essential part of the sport. All balloon pilots in Britain are licensed by the Civil Aviation Authority. The balloons cost from £1,750 for a racing balloon to £4,300 for one suitable for duration flying.

Cameron Balloons of Bristol and Thunder Balloons of London are Britain's two makers. Operating costs are so variable that aside from the propane fuel — costing up to 10p a pound, for the 90 pounds needed for a short flight, total costs are difficult to quantify. The thrill of the sport, however, is such that there are about 150 qualified balloon pilots in Britain, with untold numbers of willing helpers.

L. McL.



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Shaded and outlined areas indicate projected composite usage on commercial aircraft.

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هكذا من الأصل

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Airships ready to make a comeback

A time when aviation fuel olies are being squeezed ldwide, and prices are ing, there are many in the space industry who believe the time is ripe for a rn to the airship.

his type of aircraft has been gated to the back of the onautical stage for more 40 years—certainly since re World War II. It was arently killed off by the es of disasters in the 1930s— as that to the German t, the Hindenburg, which destroyed by fire while ing to its mast at Lakenst, New Jersey, in May, 1937. slackening of public rest was accelerated by the during World War II f for large numbers of fixedg aeroplanes for immediate tary transport and combat es, requiring substantial nd installations to support n.

s a result it is sometimes otten that in the period veen the two World Wars, airship achieved a notable rd of passenger transport, cially across the North ntic. But because of the recedented development of fixed-wing aeroplane in the nd World War, leading in to postwar emphasis on type of craft for passenger sport, interest in the airship ed, except in the minds and ts of a handful of usiasts who have struggled eep the concept alive.

ream

ut today, as the cost of tion fuel soars, and as the plexities of ground infractures also rise, bringing in r train increasing demands bigger airports and terminal lities, the long-dormant m of an aircraft that is t, cheap, pollution-free and paratively undemanding in requirements may well be n unexpectedly a new lease ife.

or undoubtedly, the airship many advantages. As techgy moves on, so many of factors which years ago led e collapse of interest in the hip have been overtaken by ts, so that today they are onger problems.

rst, the old emphasis on ogen as a means of filling the gas-bags has given way to the use of non-flammable helium, so that the safety factor in airship operation has improved enormously. Secondly, the airship, despite its bulk, does not require anything like the same power output from vast, noisy turbine engines to propel itself through the air. In most instances of modern airship design, the power-plants are comparatively simple motorcar or other types of piston-engines, using a limited amount of fuel and making a correspondingly limited amount of noise — hence their greater environmental acceptability.

Thirdly, there is almost no limit to the size that airships can be built—an airship capable of carrying as many passengers as a Jumbo jet is technologically feasible. What is lacking at present is the cash with which to undertake the design, development and production of such craft.

Basically, an airship is a lighter-than-air craft, usually powered and "dirigible," that is capable of being steered. It is also usually (but not always) "rigid"—that is, either having a skeleton structure of light metal covered with fabric of some kind, or in today's engineering terms a stiff outer casing of carbon-fibre composites with aluminium or other metal supports if needed. Non-dirigibles, that is non-steerable, airships (such as the Barrage Balloons of World War II) are of no use for transport purposes, being little more than floating and tethered devices. Similarly, non-rigid airships, while perhaps capable of carrying a few passengers, have size limitations and thus limited commercial significance beyond perhaps aerial TV platforms or for advertising purposes.

But the big lifting capacity of the dirigible, rigid airship comes from the substantial space within its hull that can be filled with a lighter-than-air gas, such as helium, which is not only non-flammable (and therefore much safer) but also non-toxic and odourless. Whereas at one time helium was expensive to obtain, today, as a result of techniques evolved to produce it swiftly and comparatively cheaply in large quantities, for example, in the U.S. space programme and for industrial uses, it has become a much more suitable gas for potential airship designers to consider.

The dirigible airship, either rigid or non-rigid, filled with helium, and powered with a number of petrol or diesel-fuelled engines to give crusing speeds of up to 120 mph or so, has become a much more feasible possibility in recent years, and throughout the world more and more designers have turned their attention to it. The aerodynamic shape of the airship is not suitable for the high speeds attainable by fixed-wing aeroplanes, and it is therefore highly unlikely that there will ever be airships that can compete directly in speed with today's jet airliners. But there are many who believe that there is still a role for the big cargo airship, capable of travelling slowly but steadily through all but the very worst weather conditions over very long distances, carrying substantial payloads.

Even in terms of passenger transport, there may be many who would prefer to spend much longer on their air journeys provided they could be guaranteed the kind of comfort that the large cabins of airships could provide. For example, one only has to look at the pictures of the almost elegant way of life that passengers could lead in the big transatlantic airships of the inter-war years—beds, lounges, promenade decks, and saloons and dining rooms—to realise just what air travel has lost as a result of today's pressures towards greater speed, in cramped cylinders of metal that sacrifice comfort in return for economic convenience.

This much lower speed of the airship has often been cited as a disadvantage compared to the 600 mph or so of the big jets. But because of the vast size of the airship's envelope, giving almost unlimited fuel-carrying capacities, the airship's range in turn is virtually unlimited, whereas that of the jet airliner is strictly circumscribed by the volume of fuel that it can carry. Thus, the airship is able to travel non-stop for much longer distances, whereas the fixed-wing jet airliner must land to refuel.

Furthermore, in terms of the ground infrastructure required, the dirigible airship also scores. It does not need a concrete runway nearly two miles long to get off from, or onto, the ground. Certainly, it needs a mooring mast, and a terminal building with all the facilities that fixed wing airport terminal buildings may have, and special loading facilities, and it probably also needs some kind of large hangar of "shed" in which it can be overhauled and housed when not in use. It also needs, in today's increasingly congested skies, the air traffic control facilities that fixed-wing aircraft need when coming into land or taking off from busy airports close to city centres.

Control

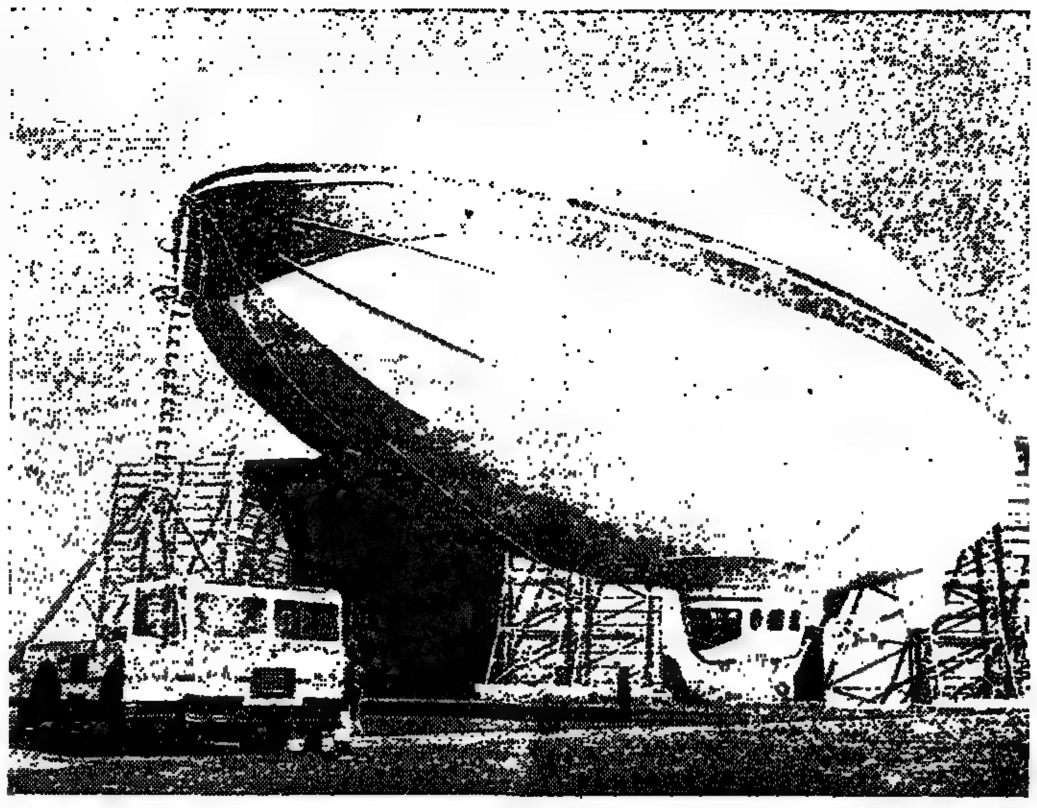
But airships also have an advantage in that they do not fly so high as fixed-wing jets. In many instances their operational area is well below that of the jet airliner, so that they are clear of much other air traffic, except in the vicinities of major airports, thereby to some extent easing the air traffic control task.

All of this adds up to the fact that the airship is a concept that is well worth reconsidering seriously for the future. From a technical point of view, many of the world's most famous aeronautical designers have in recent years turned their attention to the airship, applying today's advanced aeronautical techniques to the design and development problems that forty years ago seemed to be insuperable. The development of new, high strength-to-weight composite materials, new techniques of fabrication and new knowledge of fatigue in structures, have revolutionised airship design, and there are few areonautical designers today who would deny the technological feasibility of airship design, development and production.

The whole concept, however, still has to pass the acid test of economic viability. So far, the emphasis has been on proving the technology, and far too little work has been done in the region of cost-effectiveness. While most of the studies done so far appear to indicate that mass cargo transport by airship could be a profitable proposition so far no-one has been able to prove the point with a regular commercial service.

The airship also has to overcome to some extent the hurdle of novelty. While before the Second World War the concept was widely known to the public at large, albeit somewhat tarnished in image as a result of well-publicised accidents (such as to the Hindenburg and the UK R-101), there are now post-war generations to whom it is something unusual. The airship also has to face the undoubtedly strong lobby from the fixed-wing aircraft manufacturers, who can see their strongholds being eroded by widespread airship development.

But the airship is not without its growing band of protagonists. In the UK, a private-venture company, Aerospace Developments, has designed, and built, the prototype non-rigid AD-500, which made a successful maiden flight at Cardington, Bedfordshire, earlier this year. The prototype has been built under contract to a Venezuelan company, Aerovision, which has also placed an order for a further 20 airships. The Royal Navy will conduct a two-month evaluation programme with the AD-500, while the US Navy is also interested. The designers believe that a substantial market exists for this type of craft over the years ahead.



The UK Aerospace Developments AD-500, which made its maiden flight at Cardington, Bedfordshire, earlier this year.

The AD-500 is powered by two Porsche three-litre 180-hp engines which, developing full power, can give the AD-500 a maximum speed of 62 knots, while also being exceptionally quiet—at 500 feet the airship is virtually inaudible from the ground. The airship's envelope is made of polyurethane-coated polyester with a layer of titanium dioxide, and it is filled with helium. The maximum payload is 2½ tons. The gondola beneath the craft can carry up to 14 passengers. The uses envisaged include defence work, coastal patrol, surveying, freight carrying, aerial advertising and sightseeing work.

Other UK companies interested in airships include Airfloat Transport and Thermo-Skyships.

Other airship developments currently under way include ventures in Australia, Japan, the Soviet Union and the U.S. In the latter country Goodyear Aerospace Corporation has been one of the world's greatest builders of airships, with a record of more than 300 craft over the past 70 years. The company today owns and operates the world's only existing fleet of airships—the Europa, which tours the UK and Western Europe each summer, and three similar craft in the U.S. itself.

Recently, in testimony to the U.S. Senate sub-committee on Science, Technology and Space, Mr. Morris B. Jobe, president of Goodyear Aerospace, said that airships with helicopter-type rotors could lift up to 160 tons, almost the weight of a fully-loaded Boeing 707, and serve a variety of industries. Such vehicles were within the scope of existing technology, but the primary problem was the lack of funds to proceed "in an immature and emerging market."

Mr. Jobe said that heavy-lift airships could aid in reducing port congestion by loading ships away from docks, help fight forest fires and transport a variety of equipment for pre-fabricated structures, off-shore drilling platforms, high-rise buildings and bridges.

"No breakthroughs are needed, therefore basic research is neither required nor desired," he said, although some of the technology needed to be verified through a series of wind-tunnel and other tests.

Rotors

Mr. Jobe estimated that it would take 2½ years and $15m to complete technical verification of the heavy-lift airship and then another three-years and $70m to get it into the air. Combining helicopter and helium-filled airship technologies, the heavy-lift airship would be similar to previous heavy-lifters proposed by Goodyear Aerospace. But instead of employing actual helicopters, it would have helicopter-like rotors for lift, and conventional propellers for forward motion. The initial version would have a helium capacity of 2.6m cubic feet—about 15 times more than the existing Europa—and a useful lifting capacity of some 75 tons. Mr. Jobe also recommended that another modern airship for long-endurance maritime patrol work could be developed from existing designs produced by Goodyear.

Quietly, therefore, throughout the world, much work is being put into airship design, and there are few who really doubt that, technologically, the concept is fully feasible. If the economic case for the airship can also be demonstrated substantively in the years immediately ahead, it may well be that the world's aerospace industries will have at least one alternative answer to the growing problems of fuel shortages and soaring fuel bills, and the time may well yet come when these elegant, silent, silver shapes are once again seen in profusion in the skies.

M.D.

FINANCIAL TIMES SURVEYS

AVIATION & DEFENCE

1 August **SATELLITES**
The emphasis in space research is away from the glamorous spectaculars and more towards getting value for money — putting space to work.

23 August **AERO ENGINES & INDUSTRIAL GAS TURBINES**
The role of the gas turbine in aerospace and in land-based applications — the coming surge in orders as airline re-equipment gathers pace — the prospects for the gas turbine in industrial applications — profiles of leading companies — main industrial markets — component suppliers — technical developments.

5 September **BUSINESS AVIATION**
Just before the Cranfield Business and Light Aircraft show, this survey will discuss the growing business use of light aircraft — what the scheduled airlines are doing to retain business traffic — types of aircraft and the cost of buying and running them — specialist organisations — air taxis and air charter.

24 October **DEFENCE EQUIPMENT INDUSTRY**
The massive back-up operation by equipment, component and ancillary suppliers which is behind the major defence contracts — the increasing interest by third world countries in buying major arms and in developing their own defence industries — defence equipment suppliers in W. Europe and the US.

8 November **LONDON AIRPORTS**
The great debate on the future of airports in London and the South East may have reached some conclusion by November, but much discussion will remain.

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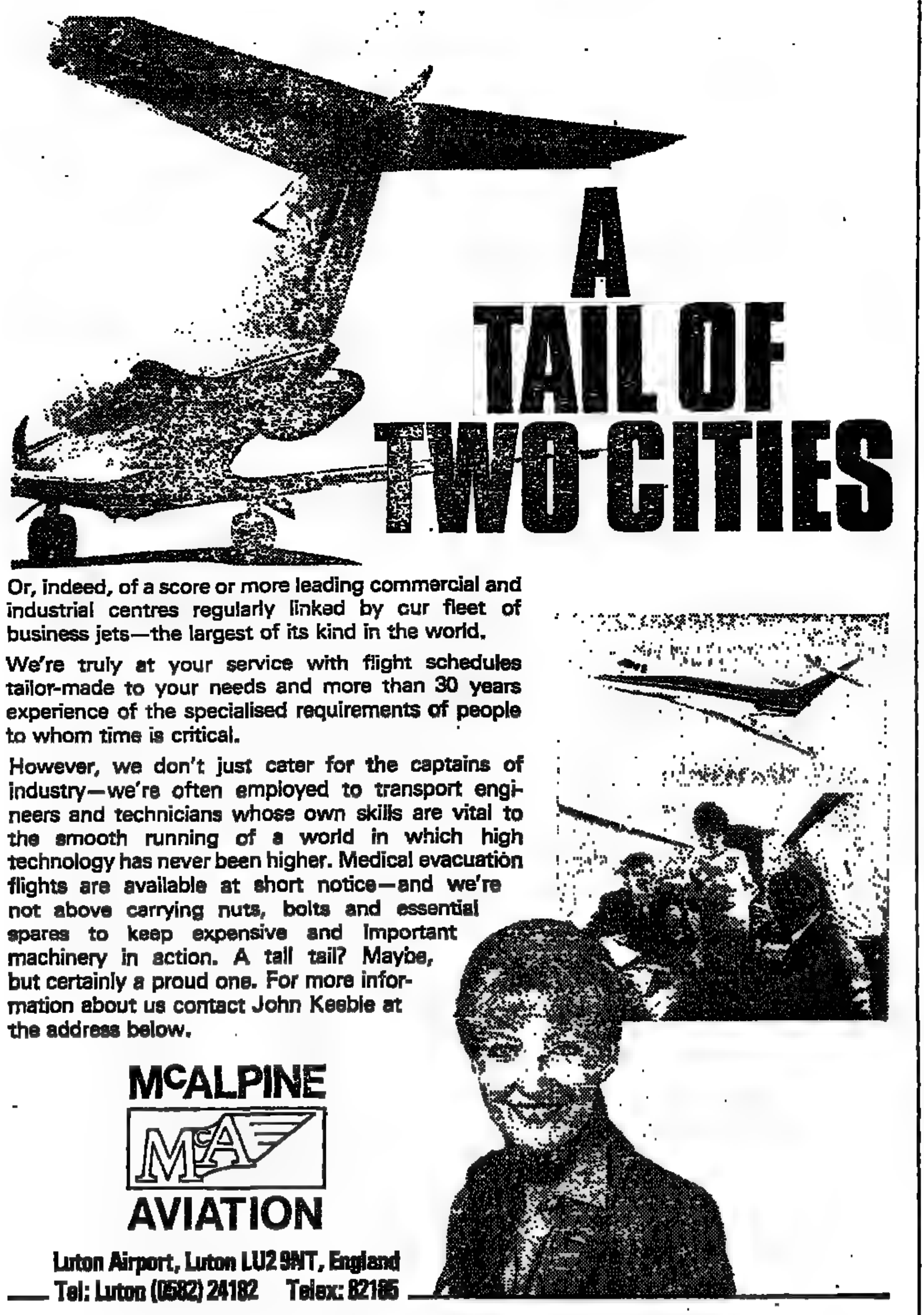

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FRANCE

Healthier atmosphere

The Mirage 4000 is the latest supersonic multi-role combat aircraft to emerge from Avions Marcel Dassault-Breguet Aviation of France. The Mirage 4000, with its distinctive Delta-winged shape, made its maiden flight at Istres, near Marseilles, earlier this year. It is powered by two Snecma M-53 turbo-jet engines. It will be seen flying at this year's Paris International Air Show.

FOR YEARS the financial deadweight of the Concorde programme has hung over the French aerospace industry undermining profits and leading to a heavy dependence on Government finance. But as the Concorde building programme has come to an end, a different atmosphere is developing. In the manner of most of the nationalised industry sectors in France today, managements are beginning to talk more about the profit motive and rely less on State assistance.

Two factors are mainly responsible for this change in the atmosphere — the dramatic success of the Toulouse-manufactured Airbus during the last 18 months, and the equally sudden flood of orders for the new CFM-56 engine made by the SNECMA group. Both of these projects have had to wait a long time to come to fruition, during which period they have eaten up large amounts of development capital. But they now have a good chance of confirming the faith that was put in them. As the orders are coming through, the impact is being felt on France's balance of trade (Airbus deliveries have been a significant factor in the surplus so far this year), on the finances of the companies, and on employment levels in the regions.

The success of the Airbus has been the most eye-catching since it has happened so quickly. The first aircraft in the range were delivered to Air France in 1974. Yet there were only about 60 in service by 1978, and the production rate by that year had gone up to only about two aircraft a month compared with some 24 a month at Boeing. In addition, sales were limited to 12 airlines, with Air France and Lufthansa, the national airlines of the two countries mainly backing the European Airbus consortium, accounting for 18 of the aircraft in service.

Clients

Last year the breakthrough came with a total of 71 orders, many of which were from 11 new clients. The turning point in the Airbus story probably came in 1977, when Frank Borman, the former U.S. astronaut, who is now head of Eastern Air Lines, visited France to try the aircraft. The Airbus gained his approval. Orders followed, with Eastern ordering 78 up to the end of 1978.

This contract was an extremely important psychological breakthrough, partly because Eastern owns the second largest fleet in the world, and partly because it gave the European product a foothold in the U.S., by far the most important market for civil airliners. Where Eastern led, others were bound to follow, and, although the Airbus still has not penetrated further in the U.S., other airlines around the world clearly took note.

The financial success of the Airbus is still by no means assured. The A-300 has cost about FFr 4.4bn ($1bn) to develop. Its derivative, the A-310, due to enter service in 1983, will have a development cost in the region of FFr 3.5bn to FFr 3.6bn ($795m). To recoup these costs, Airbus Industrie, the company which groups the national interests which have funded the aircraft, reckons that it needs to sell at least 660 aircraft—some 360 of the 250-seat A-300 and 300 of the 200-seat A-310. In other words it will have to sell 700 to be making really satisfactory profits.

It is clearly going to take several more years before this objective is achieved. At the moment rather less than 3 aircraft are being made a month. The objective is to build up the rate of output gradually to about 8 a month by 1984 and then to continue building at that rate for several years—by which time there will be probably more aircraft in the range. These are all long-term plans, and there is clearly no guarantee of success. But the company is now confident they can plan on this basis and push forward towards it target of 700 or so aircraft, because of the forecast needs of the airlines which it has already won as customers.

The emergence of the Airbus as a competitor to the Boeing range of medium-distance airliners clearly has been enough to convince the UK Government that the consortium has a future. Development of the A-310 has brought the UK back into Airbus Industrie as a full risk-taking partner. In the A-300 project, UK participation was limited to Hawker Siddeley's sub-contracting work on the manufacture of the wings: the UK Government pulled out of full participation in 1969 in the belief that it would not be a commercial success. In 1978, however, the UK Government agree to take a 20 per cent stake in the consortium, with British Aerospace taking over responsibility for wing design of the new aircraft.

This change has led to a financial reorganisation of the consortium. Equity is now split between four partners—British Aerospace (20 per cent), Aerospatiale, the French nationalised company (37.9 per cent), Deutsche Airbus, jointly owned by Messerschmidt-Bolkow-Blohm and VFW-Fokker (37.9 per cent), and CASA of Spain (4.2 per cent). Fokker-VFW of Holland continues as an associate on the A-300 programme, while Belgium has entered as an associate on the A-310.

So far as France is concerned, the most immediate benefit from the Airbus programme is being felt in terms of overseas earnings (although this must be balanced against the fact that many parts are sub-assembled by other members of the consortium), and employment, which will go up quite dramatically at Toulouse. So far Aérospatiale, the nationalised company which is responsible, as a sub-contractor to the consortium, for constructing the aircraft at Toulouse, has not made any money out of the programme.

At the same time, however, Aérospatiale is beginning to come out of a long tunnel of poor results. After seven years of losses it managed a substantial turnaround last year which has led to tentative forecasts of a profit in 1979. Business increased significantly last year—*from* a turnover of FFr 9.5bn in 1977 to FFr 10bn—and is expected to go up even more sharply in 1979, when the company is forecasting sales of around FFr 12bn. Losses were cut last year to FFr 100m ($23.3m), compared with the FFr 447.4m of 1977, and the trend is still clearly upwards.

The larger part of this improvement was due to the company's missile division. But the longer term prospects are equally dependent on an upswing in the aircraft section. A little more than half of its FFr 500m investment this year, along with a similar amount in 1980, will be devoted to the aircraft division.

Gestation

In the aircraft engine sector of the French aerospace industry, SNECMA has enjoyed a more stable financial record than Aérospatiale. But in its latest engine development, the CFM-56, a joint project with General Electric of the U.S., it has had to endure a similarly long gestation period to the Airbus Industrie with the Airbus. Conceived in 1971, the CFM-56 had to wait until last March before attracting its first order from the U.S. United Air Lines group, for re-engining DC-8 jets. Since then sales ha mounted quickly to about 5 engines at the present momer

This order book will bri SNECMA a potential FFr 1.6 in earnings against an estimat development cost of abo FFr 2bn. But there should more orders on the way. to now the main contracts ha come from the U.S., via t General Electric link, whe United Air Lines, Delta a Flying Tiger, which claims to the largest freight airline in t world, have chosen the CFM to re-equip their DC-8 flee Among potential customers a airlines which need to re-equ their Boeing 707 and 737 fle and the U.S. airforce with KC-135. In the future, engine might also be in com tition to power the propo Airbus Industrie Joint Eu pean Transport (JET) airlir

The breakthrough of CFM-56 in world markets, wh it fills a gap for engines of tonnes thrust, will clea improve SNECMA's finan position. Although the 1 results have not yet b finalised, the company mad healthy profit of FFr 70 after tax and charges in 1 and it has been able to pa dividend for each of the last years. Its consolidated turno stood at FFr 3.4bn, and expects its expansion to c tinue, largely based on m co-operative deals with Gene Electric.

This programme is lookin a range of engines—the CFM the CF6-32 and the CF6-5 with thrusts of between 10- 25 tonnes. It also has a family of military engines un development—the M-53 and Larzac, a co-operative vent with Turbomeca.

Given the Aerospatiale SNECMA activities, plus continuing success of Dassault group with its rang military and executive aircr the French aerospace indu is probably in a better sh today than at any time du the decade. Unless someth goes very wrong with all forecasts about growth in transport and the airlin replacement needs over the n few years, the different c panies seem well set for steady period of growth. M to the point for the French t payer, that should also accompanied by adequ profits.

Terry Dodswo

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WEST GERMANY

Rejoicing over Airbus

THE DOMINANT event of the past 12 months for the West German aerospace industry, as for those of its partners, has been the enormous success of the European Airbus programme. Although they have been reluctant to claim public credit, German politicians and officials, from Chancellor Helmut Schmidt downwards, played the vital diplomatic role in reconciling France and Britain to the point where Britain could agree to rejoin the Airbus Industrie consortium at the end of last year as a full participant in the A-310 programme.

For executves and engineers in the West German industry, who have always had excellent personal and working relationships with their British counterparts, it was an additional source of satisfaction that the first meeting of the enlarged Board of Airbus Industrie should have been held last January in Ottobrunn, near Munich — headquarters of Messerschmitt - Boelkow - Blohm (MBB), the larger of the two West German partners in the consortium.

It is not only Anglophilia, however, that gives the Germans such satisfaction in the success of Airbus. The programme is already pushing hard into the market for wide-bodied airliners that the American giants previously had to themselves. It is also rapidly approaching the number of orders (somewhere between 350 and 400 according to exchange rates used) where, at least in theory, it should begin to enable the sponsoring governments to see a return on their money.

That is a matter which is not yet being openly talked about, yet it is already clear to the West German Economics Ministry that the Airbus programme fulfils its chief criterion for making investments in aerospace projects—that they should turn out aircraft the market wants to buy.

For the industry itself the Airbus programme has been the main reason for a considerable brightening of the employment outlook in North Germany, where both the Hamburg plants of MBB and the Bremen factories of VFW-Fokker are heavily involved in the Airbus programme.

In Bremen especially the order books and employment prospects are brighter than they have been for several years, and certainly much better than at the painful moment in late 1977 when VFW-Fokker was forced by Bonn to abandon its short-haul jet airliner, the VFW-614. Should the Airbus order books ever swell to the point where governments were prepared to underwrite a second production line, North Germany could be relied on to make a strong case for being given it.

That the North German aerospace industry should now be in so much healthier a position—to the point that even in Bremen, with its chronic unemployment problems, skilled men are in short supply—is naturally gratifying both to the State Governments, which are now deeply involved, and to the unions. Yet there is some doubt about how long this *happy situation will last.*

Problem

There continues to be a "North-South problem" in the German aerospace industry, with the North still overwhelmingly dependent on the civil market and the South getting most of the lucrative steady military work. This is indeed one of the underlying reasons for the continued foot-dragging that has still made it impossible to bring about the merger of MBB and VFW, the German half of the German-Dutch group. The North will want a share of the military work—the South will be reluctant to give it up.

The industry has been resigned to the inevitability of the merger for several years now, acquiescing in the view of Herr Martin Gruener, the Economics Ministry State Secretary, who is Bonn's co-ordinator for the aerospace sector, that West Germany needs the "single voice" in aerospace that both Britain and France have had since the latest nationalisation measures in each country. Yet any number of confidential talks at the level of top management, to say nothing of finger-waggings on the part of Herr Gruener, have so far failed to bring about the result which everyone agrees is inevitable.

Should Herr Gruener choose to make more active use of his powers of coercion (through his control of funds for Airbus and other programmes under his control), VFW-Fokker would be in little position to resist. It is already on a tight financial leash as a result of the terms on which Bonn came to its rescue at the time of the VFW-614 cancellation.

MBB, on the other hand, is in a far stronger position. There is little doubt that the Bavarian-based group will come out on top in terms of management style and personalities once the merger does take place.

For MBB, the main emphasis for a decade and more has been to spread itself into as many international co-operative programmes as possible. Thus it is the German partner in the British-German-Italian Tornado Multi-Role Combat Aircraft programme, co-ordinated by the Panavia consortium, whose former chief executive, Herr Gero Madelung, is now chairman of MBB itself.

Besides Airbus Industrie, MBB is also a partner in the highly successful Euromissile consortium which produces the Milan, Hot and Roland weapons systems. Not least, it has built on its experience with the widely-sold BO-105 helicopter to enter new joint helicopter developments with both France and Japan.

The next challenge for MBB is already on the horizon, or even nearer. This is the so-called tactical combat aircraft for the 1990s, or TKF-90. Still in a phase of definition by air staffs and governments, the project could mark a new phase of co-operation among European aerospace industries, or it could show the limits of co-operation if (as some German aerospace men hint) negotiations with Britain and France come to nothing and West Germany looks instead to the U.S.

MBB, for its part, has for nearly two years been working at a design and conceptual level with McDonnell Douglas of the U.S. on a potential joint project, and there can be little doubt that it would seek to push this into a more active phase if talks with the French and, more to the point, the British Defence Ministers do not make substantive progress this summer towards a joint European fighter for the 1990s.

The TKF 90 is not the only big new military project in offing. Dornier, the priva held, third-ranking airfr constructor currently hea committed to the Fra German Alpha-jet program stands to gain a healthy amo of work as head of the con tium of West German compa providing the avionics for NATO version of the Boeing Airborne Warning and Con System (AWACS). As alw Dornier is successfully plou ing its own furrow, with aircraft division still busy Skyservant utility airc while the company is diversi into a wide range of ot defence and engineering fie

Yet until the MBB-V merger is completed, there continue to be a sense of lessness and distraction in German aerospace industry. delay appears to be the f less of the managements of two companies than of th shareholders.

Presence

Here, matters have bec considerably more complica by the financial presence of fewer than three State Gove ments—Bavaria and Hamb between them have 43 per c of MBB, while Bremen last y bought control of a hold company that owns 26.4 per c of VFW. The States h bought in because each feel needs a say when, inevita the new company gets down talking about the closure of more marginal plants.

It seems unlikely, howe that any of the big indust groups which make up remainder of the sharehold of each company will reac consent to give up its own s on the Board of the n company—indeed one of the Krupp, is believed to be ne tiating to raise its stake in VI to make certain this does occur.

Another complicating fac is the attitude of the Du Fokker shareholders, who, thought in Germany to reconsidering whether (as been generally assumed up now) they really wish to along with the breaking up the transnational group, n that Fokker appears to have f prospects on its own.

Adrian Dic

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UNITED STATES

Heady days as defence outlays rise

ESE ARE comparatively dy days for the U.S. Aero- ce industry. President Carter promised to increase defence nding by 3 per cent a year 'eal terms and this will main- ı and in some cases increase dicted revenues from Depart- ət of Defence procurement research development, test evaluation programmes.

leanwhile, the re-equipment le which is steadily sweeping world's airlines promises ior benefits for Boeing and hopes of expanding order books at McDonnell Douglas and Lockheed.

But the U.S. Government remains by far the industry's largest customer and accounted for 71.5 per cent of last year's total sales of $37.3bn which were 15.4 per cent higher than the previous record set in 1977. Profitability, too, has continued to increase so that net profits as a percentage of sales have risen from 3.4 per cent in 1976 to 4.2 per cent in 1977 and 4.7 per cent last year.

Military equipment sales for the next three years look promising according to Mr. Edmund Greenslet, aerospace analyst with Merrill Lynch. Government spending on research, development test and evaluation is expected to rise 30 per cent from last year's $10.694bn by 1982 and on procurement by 31 per cent from $30.018bn to $35.97bn.

But many military equipment companies are expecting good business from other sources as well as the U.S. Government. The Egyptian-Israeli treaty could bring sizeable orders to the industry because of the U.S. Government's promise of large amounts of aid to modernise the two countries' defence forces. Orders which flow from this aid package could be a great help in offsetting the cancellation of contracts from Iran. General Dynamics, for example, suffered the cancellation of an order for 160 F-16 fighters. Some of these are now expected to go to Israel, the U.S. Air Force and perhaps even to Egypt so that potential production gaps do not look likely to be too serious.

Moreover, other U.S. allies are stepping up their purchases in this country. Japan's military budget has increased 5.5 per cent a year, after adjusting for inflation since 1977. Japan is buying some McDonnell Douglas F-15 fighters and Lockheed PC3 anti-submarine aircraft and will build others under licence. Japan is also ordering Beech Super King Airs for maritime patrol and some Grumman E-2C early warning aircraft. Possible large orders in the pipeline include Canada's need for a new fighter which will probably be selected from General Dynamics F-16 or McDonnell Douglas - Northrop F/A-18A designs. Spain may also be in the market for the F-16, the F/A-18A or the Northrop/McDonnell Douglas F-18L.

Cushion

Government business accounts for 77 per cent of McDonnell Douglas's sales and 57 per cent of Lockheed's. This obviously provides an important cushion for both companies against problems with their commercial aircraft production, which in Lockheed's case have been particularly severe because of the L-1011 TriStar. In 1978, TriStar's sales of $249m were at their lowest level in the aircraft's seven-year history and accumulated losses on the programme since 1974 climbed to $508m. However, the company claimed at the end of the year that "a turning point in new orders has been reached." Eight aircraft were delivered last year, compared with 11 the year before, but the company is stepping up its production rate to a total of 24 a year by early 1980. Increased costs associated with this and with the introduction of the Dash 500 model were held responsible for a first-quarter 1979 loss on the programme of $35.9m compared with $29.7m in the 1978 quarter.

Lockheed warned in April that these increased costs "will defer the point at which L-1011 production is expected to reach break-even on a current basis." Despite the company's optimism about the outlook for L-1011 orders, so far this year it has failed to maintain the momentum which last year brought Lockheed 30 new orders and letters of intent and 26 options. This was the best TriStar year since 1968, and left the company with 30 unfilled orders at the end of December. In the first quarter of this year, however, only one order was booked and clearly Lockheed has a major marketing job to do if its accelerated production plans are to be fully justified.

As expected, McDonnell Douglas failed last year to match the record intake of 128 new orders established in 1977. Encouraged, however, by the obvious strength of the world market, the company like Lockheed has accelerated its production rate so that it was able to deliver 10 wide-bodied DC-10's in the first quarter of this year compared with five in the same period last year, and eight DC-9's compared with four a year ago. But also like Lockheed, McDonnell Douglas has so far not been able to match last year's new order rate, which for the full year totalled 43 DC-10's and 60 DC-9's. But the company is clearly encouraged by interest in the DC-9 Super 80, a short-to-medium range high technology jet. It is now clearly determined to press ahead with a stretched version of its DC-10 providing that customer response is promising enough.

But McDonnell Douglas has decided against going ahead with a new aircraft directly competitive with Boeing's 767 and the A-310 version of the European Airbus. The competition between Airbus and Boeing last year was one of the most absorbing developments within the world commercial aircraft industry and both appeared to do very well out of a booming market. Boeing has dismissed reports that it is "rethinking" its wide-bodied 767 design in view of the Airbus' success, adding that the company had expected though competition from the European company, not least because it had the backing of the French and West German Governments who have been prepared to support a range of financial and political inducements which Boeing cannot match.

Netted

But Boeing hardly seemed at a serious disadvantage last year when it netted firm orders for a record 490 new airliners worth about $11bn. By the end of March the Seattle manufacturers' order book had climbed from $11.16bn to $14.66bn in just three months largely because of new orders which by the end of May amounted to 95 727, 737 and 747 jets. During 1978, production rates were increased from 15 aircraft a month to 19 and will have risen to 28 per month by the fourth quarter of this year. The company expects sales this year of $8bn compared with 1978's $5.4bn.

By the end of May, however, Boeing had not captured any more new orders for its "new generation" of 757 and 767 aircraft to add to the 40 757 and 84 767 contracts taken last year. So far Boeing has drawn only one overseas customer, Canada's Pacific Western Airlines, for [illegible] 767, while major carriers such as Lufthansa and KLM Royal Dutch Airlines have been ordering A-310s from Airbus. In recent years about half of Boeing's sales have been made abroad and the test facing the company is the extent to which it can maintain its hold on the overseas market over the next five years in the face of stiff competition from Airbus Industrie.

John Wyles

SOVIET UNION

Successes and failures

RHAPS IT is because the ïet aerospace industry is so t,, and its successes so much ıark of national pride, that failures and shortcomings e received what may be disproportionate attention.

.eroflot, the Soviet Union's ɔurpose national airline, will : year carry 100m passengers, : 3,500 cities, fertilise 25m tares of crops, transport 3m nes of freight and dust 90m tares of agricultural land and ɛst.

he Soviet air fleet remains of the two largest and most ɛrentiated in the world. It also, arguably, the most ntial. Air travel is the only that the vast distances in Soviet union can be over- e. There is only one trans- ɔinental railroad in the USSR no cross-country highway.

ar flung and essential, Aero- is the Soviet Union's pre- nent and over-patronised sportation monopoly, but ɔite this the reputation of et aerospace has suffered in last few years by the in- ry's failure to introduce two ortant and prestigious pro- ı—the TU-144 supersonic sport and the IL-86 wide- ed jet.

he TU-144, the IL-86, and YAK-42, a three-engined, t-range aircraft, were all duled to be introduced into ɛenger service during the 3-80 plan period and each, different reasons, could have ɾed an important role. ous technical problems, ever, have prevented either TU-144 or the IL-86 from ıg into passenger service although there is no known ɔon why the YAK-42 has not ı introduced, it has not ited flying either.

he TU-144 began carrying ɛengers in November, 1977, the 2,000-mile Moscow to ıa Ata run. This service soon being offered only radically, however, and in e last year a TU-144 crashed ing a test flight, killing two ɾmen and critically injuring ɛe. The aircraft has not ɾn passengers since and ıirers at the Aeroflot office told that there is no pros- of the flights being ımed at an earlier date.

he TU-144 has been ɡued with problems for ɛs. In 1973 a demonstration raft crashed at the Paris Show. There have been ɿistent problems with in- ɿent fuel consumption and r the crash last year, Soviet ɛstigators found stress ɛks around the vertical tail ion of the aircraft. Western ıtion experts believe that frame integrity and surface gue remain among the ıcipal difficulties with the raft.

·estige

he problems with the TU-144 acutely embarrassing to the iet Union, which by now probably invested too much ıey and prestige in its ersonic transport to give it For months before the first ɛduled passenger flights an the aircraft was parked ı highly visible position on runway at Moscow's nodedovo Airport and a lel TU-144 still forms part the big Aeroflot advertising ɔlay in central Moscow.

ɪad the plane been ready it ıld have almost certainly n put into operation on the ɪcow-Havana route and on tes between Moscow and ɔts in Africa and Asia—and enhanced Soviet prestige transporting passengers for 1980 Moscow Olympics.

lore important, however, for operation of Soviet air trans- t than the failure to perfect TU-144 have been the dif- lties in developing the 350- senger IL-86, which holds the promise of one day nging the face of Soviet civil ıtion.

oviet airports are badly over- wded and flights on the most vily travelled routes rarely e off with an empty seat. The ent of the IL-86 on routes Moscow-Leningrad and ɪcow-Kiev could greatly eve airport pressure, reduce flight frequency and relieve a lot of frustration by giving passengers a better chance of taking off on time.

The aircraft has been making experimental flights on routes between Moscow and the southern resort towns of Mineralnye Vody and Sochi, but these flights are preliminary route planning exercises and not necessarily a prelude to the inauguration of passenger service.

The IL-86 flies virtually empty on these experimental flights so they in fact prove very little. The problem with the aircraft has always been underpowered engines. With high density loading the IL-86 could have the capacity to carry 400 passengers but it now appears that the Soviet Union does not have an engine able to supply this kind of mass transport.

The Soviet Government tried to buy engines for the IL-86 from General Electric in the U.S. and Rolls-Royce in Britain but the U.S. Government blocked the GE sale and Rolls-Royce has also turned the Soviet Union down.

Sceptically

Mr. Ivan Razumovsky, the Deputy Soviet Minister of Civil Aviation, said that the IL-86 will start on Soviet routes by the end of the year, but Western experts are treating this claim very sceptically.

The most promising of the new Soviet aircraft which were to be introduced into service during the present 1976-80 Five-Year Plan period was the Yak-42, a 120-seat aircraft which can land on the rough ground of a Siberian airstrip and has special navigation equipment to simplify control and make it possible to fly in difficult weather.

Unlike the larger aircraft, the Yak-42 has shown no evidence of technical shortcomings but it also has yet to be introduced into service. The most likely explanation is that older aircraft, such as the TU-104, the TU-124 and the IL-18, which were to have been phased out, are proving more durable than had been expected.

Soviet officials have said that the TU-144 and the IL-86 are destined to become the mainstays of the Soviet civil fleet, but the problems that have been experienced with both of them are serious and apparently stem from the more basic weaknesses of Soviet large engine design.

The Soviet civil fleet, like its American counterpart, has benefited greatly from the technological spin-off of military aviation research. In the case of the Soviet Union the experience of the Vietnam war and the 1973 Yom Kippur war led to an apparent pooling of talent in small engine research. The results included the excellent power-to-weight ratio in the engines of the MIG-21 and the MIG-25 Foxbat.

The TU-154, which was built some years ago on the model of the Boeing 727, is widely used, as is the IL-62, which despite some fuel consumption problems, is used on international flights and long-haul routes. By 1980 is is estimated that half of Soviet air passengers will be carried in TU-154s or IL-62s.

The technical problems involved in perfecting the TU-144 and IL-86, however, may not be fully solved without a greater commitment to heavy engine research.

As the 1980 Moscow Olympics near, the Soviet Union can be expected to intensify its efforts to get the TU-144 and IL-86 into regular passenger service with the result that attention may be focused on what they have so far failed to do instead of the enormous amount they have achieved.

Whatever the fate of supersonic transport, Aeroflot continues to knit the Soviet Union together and Russia is not sufficiently discouraged to have lost its taste for prestige projects. To the 82 countries its airline already serves is soon to be added a regular air service between the Soviet Union and Antarctica.

David Satter
Moscow Correspondent

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THE NETHERLANDS

Decisions awaited

THE DUTCH aircraft industry—in the shape of the aerospace group Fokker—has come through a difficult year but it now has a much clearer view of the future. The company's revitalised management is carrying out an internal reorganisation to improve its planning.

A decision has yet to be taken on whether to go ahead with a new 115-130-seat jet airliner, the F-28 Super, but progress has been made on defining the type of aircraft the market wants. Meanwhile, demand for the F-27 is strong, while the Airbus A-300, in which Fokker has a stake of just under 7 per cent, is capturing new markets.

The impact of the Dutch Government's decision to order Lockheed Orions in place of the French Breguet Atlantique for marine reconnaissance work has been less than Fokker first feared—or claimed to fear. Fences are now being mended with France. The break-up of the 11-year-old merger with the West German VFW group remains a major uncertainty though, and there is no immediate prospect of a solution.

Support

A decision is still awaited from the Dutch Government on whether it will support Fokker's participation in the A-310 version of the Airbus. Fokker is a subcontractor to the A-300 project but hopes to take a risk-sharing stake of just under 2 per cent in the new aircraft—making the fairings and wheel doors. Although it is very positive about the Airbus project Fokker is not prepared to extend its involvement unless it has guarantees that the Dutch Government will compensate it for the loss it expects to make. Its participation in the A-300 is also loss-making, but unlike Spain, France and West Germany, the Dutch Government has not provided compensation for the contract drawn up at now unrealistic dollar prices.

Fokker is coy about revealing its own losses on the A-300 Airbus but says they are "peanuts" compared with the DM10m it estimates the West German Government puts up in subsidies for each aircraft for the German industry's share in the deal. The Dutch Government is in favour of European aerospace co-operation — the Economics Ministry's 1979 Budget memorandum recognised that aircraft manufacture is a high-value activity providing high-value jobs with a spin-off effect — but it has yet to decide on support.

Ironically the recent success of the Airbus models has made more pressing the problems of Fokker's losses—the more aircraft sold the further it is pushed into the red.

A major stumbling block in the A-310 Airbus talks is the demand that Fokker should not develop any aircraft which would compete with one produced by the consortium. This would clearly prevent the Dutch concern developing the F-28 Super. Alternatively Fokker should bring the F-28 Super into the Airbus project.

Neither of these demands is compatible with Fokker's aim of maintaining an independent capacity to design, build and market its own aircraft. "Faced with the choice of giving in to these demands or not joining the A-310 project we would opt to stay out," said Fokker's public relations manager, Mr Nol van Fenema.

Fokker is hopeful that the Airbus group will climb down though. Fokker expects to have a fair idea of what its new F-28 Super will look like by the middle of this year. Talks with potential foreign partners have gone better than the company expected and there are hopes that these partners will put up more than the 50 per cent of the Fl 1bn ($480m) cost than was initially thought. This would clearly be welcome to the Government, which is already faced with making public spending cuts and with demands for funds from a number of recession-hit industries.

Fokker reports interest in the U.S. from the major aircraft companies such as Boeing, Lockheed, General Dynamics and Northrop for the F-28 Super. McDonnell Douglas has been taken off the list of possible partners though. The Dutch company is looking for a limited number of risk-bearing partners, as well as several subcontractors. European concerns which are being considered in this role include Saab, Dornier and Aeritalia.

The interest of the F-28 Super for a company such as Boeing lies in the prospect of a smaller aircraft to replace the 737—which might otherwise require costly new engines and wings. The Japanese are unlikely to come in as risk-bearing partners but may become sub-contractors.

Change

Fokker's decision to seek out partners in the U.S. and Japan as well as in Europe marks a fundamental change under the chairmanship of Mr. Frans Swarttouw. He has thrown overboard the exclusively European attitudes of his predecessor, Mr. Gerrit Klapwijk, who stepped down last year. "The thinking used to be that Europe could teach the Americans a lesson. We now realise we can forget that," Mr. van Fenema remarked.

Meanwhile the faithful turboprop F-27, which has been on the market for 20 years now, continues to surprise its makers. Thirteen of the aircraft have been sold already this year compared with 11 in the whole of 1978. Fokker hopes to announce shortly an order for three from a U.S. commuter airline—its first order ever from a U.S. airline and a sign that even the sophisticated U.S. market offers possibilities for the F-27. Up to now this aircraft has tended to appeal mainly to military users and the airlines of developing countries.

Unless Holland ordered Dassault's Atlantique to replace the ageing Lockheed Neptunes for marine reconnaissance work French co-operation on a number of deals would be withdrawn, Fokker was forecasting last year. Mr. Swarttouw even went so far as to claim the company's future as an independent aircraft maker would be threatened. Despite intensive lobbying by Fokker the Dutch Government chose the Lockheed Orion—and Fokker has survived.

The Orion decision did lead to an immediate halt to negotiations over an order from France for up to 18 maritime versions of the F-27. There are signs that French anger at being passed over a second time—Hollan earlier opted for the F- fighter at the expense of Mirage aircraft—is lessenin Contacts have been resumed the F-27 order.

Prospects for French operation on the F-28 Sup appear small, though, partic larly as the issue is complicat by the fact that this aircra might compete with an Airb consortium project. If, ho ever, market research shows t need for a larger engine for t F-28 Super than the Rolls-Roy RB-432 now planned, the U. French Snecma CFM-56 engi might be an alternative.

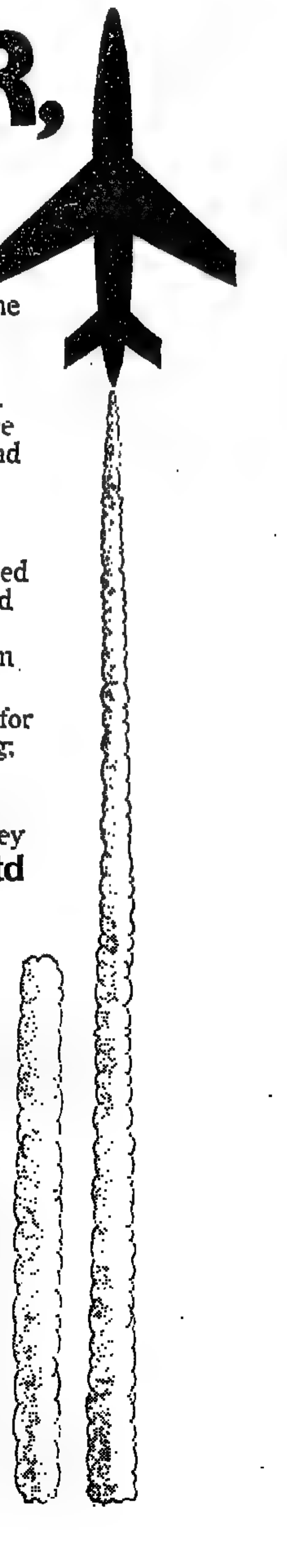
Fokker's most promisi military programme—the asse bly of the F-16 fighter—is go according to plan. The fi aircraft for the Royal Dutch Force will be handed over June 6. Fokker is due to deliv a total of 102 F-16s to the Dut Air Force and other 72 to N way. It is also making 6 centre fuselages as well as whe doors and wing moving pa for other NATO air forces.

Upward

Fokker expects to report small profit for 1978 aft making a record loss the y before. It faces three or f difficult years but expects upward trend of profits to c tinue. Turnover should a double over the same peri Apart from the need for finar it also faces shortages of skill staff—despite the high level unemployment in Holla Skilled workers, when they be found, are often unwilling move. It is also dissatisfied w the levels of skills shown school-leavers and says it to train them up to its standards.

With commercial prospe brightening, Fokker is now patient to end its merger w the German VFW concern it faces a demand for seve hundred million guilders co pensation from the West G man Government. A leadi German banker has be appointed to mediate. But F ker is not hopeful that this li with its past will be easily swiftly broken.

Charles Batchel
Amsterdam Correspond



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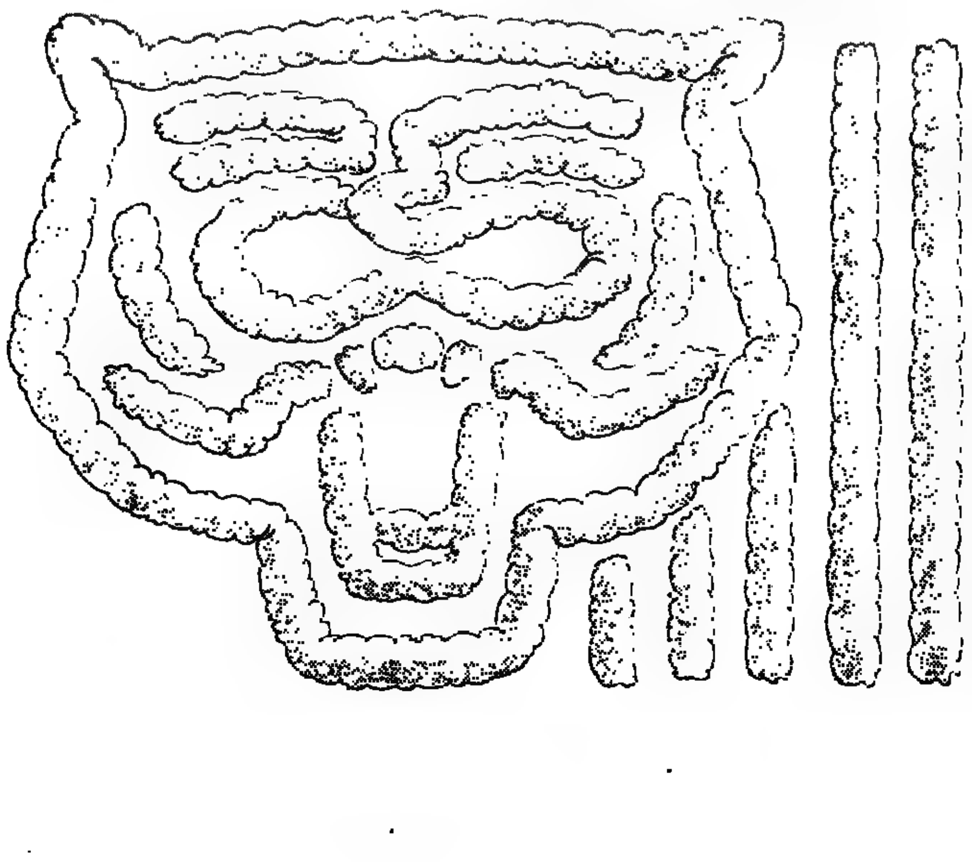

ITALY

Happy American link

AEROSPACE IS turning into one of the success stories of Italian industry, and a welcome show-piece for the country's much criticised public sector, which controls several of the main manufacturers. In statistical terms alone turnover rose 7.3 per cent at constant prices to L900bn ($1.06bn) last year, while exports rose 15 per cent to L430bn.

Substantial difficulties of course exist. The financial state of much of the industry exhibits that familiar weakness of other major sectors, high indebtedness and often an inadequate capital base. Aerospace has long suffered from the weakness of the domestic market, and until recently an excessive dependence on the military sector.

In both absolute and proportional terms defence spending in Italy is lower than in comparable Western European countries. The Institute for Strategic Studies estimated it at $4.4bn, or just 2.6 per cent of Gross National Product in 1977.

At the same time the chronic tardiness of payment by the Air Force has added to the financial difficulties of the various contractors. Aeritalia for example, the most important concern created from the merger of Fiat's non-engine division and the aerospace interests of the IRI/Finmeccanica State holding group, recently blamed its 1978 loss of Lire 17bn ($20m) in large part on the Lire 50bn still owing from the Defence Ministry on completed contracts. In addition the company still has not received a promised Lire 100bn. of aid from the Government to help it with its work on Boeing's new 767 medium range passenger aircraft, forcing it to find the funds elsewhere but only at the cost of a further rise in its indebtedness.

However, it is the deal with Boeing, completed last summer, which is the brightest jewel in the industry's crown. The 15 per cent stake in the project, handled by Aeritalia, may prove to generate $2bn of business for the Italian manufacturer. It offers a vital breakthrough into an international civil aircraft programme, that will provide not only revenues but jobs, and a key foothold in a highly sophisticated technological sector, with a solid future.

The benefits indeed are already starting to flow through. Total orders and options for the Boeing 767 had reached 165 by the start of May. Aeritalia's sales last year jumped by almost 50 per cent to L200bn ($235m), and more important orders in hand more than doubled to L451bn ($507m) by December 31 last. Above all, the sheer size of the contract makes it certain that over the next few years the share of civil aerospace in overall industry turnover is set to rise sharply over the next four or five years, and with it that the financial performance of the group will improve.

Buoyancy

Under the programme Aeritalia will be responsible for most of the moving parts of the 767's wings and much of the nose cone, to set alongside the work it will continue to do on the DC-9, and DC-10 aircraft of McDonnell Douglas. The buoyancy of the company's position is such that only muted complaints were heard when Alitalia the State airline earlier this year confirmed its plans to add eight European Airbuses—competitors of the 767—to its fleet, with options for a further three, as part of its substantial current expansion programme.

However, if the Boeing deal has been the most spectacular development for the industry in the last 12 months, the military side as well has seen considerable activity, and contributed to the 6.5 per cent increase in Italy's aerospace workforce last year to around 35,000 men, a respectable proportion of whom are employed in the depressed south.

For Aeritalia, indeed, the military side remained the mainstay last year, including its 12 per cent stake in the Anglo-German-Italian Tornado Multi Role Combat Aircraft project, of whose total 809 order 100 will go to the Italian Air Force, directly assembled by the company. The other lynch pin of its military work is the G-222 military transport which is proving a distinct, and indeed controversial, export success.

A projected $400m order for 20 of the aircraft to Libya was held up by a veto from the U.S.—ostensibly on security grounds since it was fitted with General Electric T-64 engines. But many Italian industry officials suspect that ordinary commercial considerations had as much to do with the obstruction of a sale of an aircraft which competes with Lockheed's own Hercules C-130 military transport.

It is now on the cards that this embargo will be circumvented by fitting the G-222 with Rolls-Royce engines. In the meantime three have been sold to Argentina and one to Dubai, while Aeritalia salesmen are optimistic of penetrating other significant foreign markets. In the longer term Aeritalia will be in large part responsible for the replacement of the ageing Fiat G-91 with a new short- and medium-range fighter now designated as the AMX. General endorsement for the aircraft, of which the Italian Air Force may require between 150 and 200, has been given by service chiefs and it now seems probable that the long-stalled project will go ahead.

There has been much talk of international collaboration on the AMX, possibly involving Sweden on the airframe, and Rolls-Royce, via its proven Spey engine, on the powerplant side. However, according to Signor Fausto Cereti, Aeritalia's managing director, the odds are that the aircraft will be an all-Italian affair, powered by an engine developed jointly by the relevant divisions of Fiat and Alfa Romeo, a subsidiary of Finmeccanica/IRI.

Aeritalia's airframe partner will be the country's largest privately owned aerospace concern, Aermacchi, a good illustration of the dynamic medium-sized enterprise in which Italy specialises. Of its L 60bn ($71m) sales in 1978, four-fifths went for export, largely a reflection of the success enjoyed by its MB-326 fighter-trainer, of which over 800 have been sold.

Macchi has now begun production of the scheduled replacement of the MB-326, the MB-339, of which 100 have already been ordered by the Air Force, and whose prospects, if price is anything to go by, must be counted bright. In a recent interview Signor Fabrizio Foresio, managing director, and member of the family which c trols the company, claimed t the MB-339, powered by a F Piaggio motor, cost arou L1.5bn apiece, half the price its direct French competi produced by the Dassault gro and a third that of its Brit rival manufactured by Hawk Siddeley.

The other focal point of public sector's involvement aerospace is the Agusta gro now 51 per cent controlled the State conglomerate EFI and specialised above all in helicopter field. Agusta is n a group which boasts sales over L310bn ($364m) agai under L64bn five years ago, a which employs 9,100 worke Exports now account for 80 cent of its revenues, and rarity indeed for the State s tor—it is profitable, to the tu of L5bn in 1978.

Promoting

Agusta is particularly pro of its record in promoting jo on the Mezzogiorno, where f example a new plant employi 1,000 went on stream at Brind in 1978. For the future prospects are bright: orders hand exceed L1,000bn, and b stered by a predicted annu growth of 15 per cent of t world helicopter market, sal this year are forecast at ov L420bn.

It is against this encouragi background, scarcely thinkable decade or so ago, that t Government must tackle t difficulties of Italy's aerospa sector. They boil down to tw in the first place to ensu adequate financial suppo along the lines extended by t much larger aerospace indu tries of nations like Britain a France, and in the second pla to establish a more efficie organisation upon a sector whic by international standards highly fragmented.

The signs are, though, th once the present period of pr tracted political uncertainty over the authorities will tur their attention to the industr Not least of the argument pressing them in that directio is that the sector is exactly th sort of high technology area which a nation like Italy mu logically concentrate for th future.

Rupert Cornwel

هكذا من الأصل

هكذا من الأصل

SWEDEN

Go-it-alone policy abandoned

TER WRANGLING for three ars over defence spending and future requirements of the edish Air Force the Riksdag arliament) last month finally ew out Saab-Scania's light ack aircraft project. Without s contract industry spokes- n had constantly reiterated, eden's capacity to design and ild its own military aircraft uld be lost.

The Riksdag decision was not ar-cut and left some ends tied. Questions about how the eds of the Air Force are to be t in the future and the role be played by the Swedish comnies remain unanswered. Saab Bofors have been given nor compensation through a ntract to develop an anti-ship ssile for the Navy and Air rce.

But both the two companies st concerned, Saab-Scania and lvo Flygmotor, the engine nufacturer, have been swift draw their conclusions. Saab stepping up its efforts on the il aircraft side and is busy king foreign partners. Flygtor has ensured its continued ticipation as a junior partner new American engine prots. The Swedes recognise that survive they have to get olved in the rapid interionalisation of the aircraft ustry.

he Viggen, the fighter version which is just going into vice with the Air Force, is ly to be the last wholly edish combat aircraft design. replacement some time in the 0s will be either a foreign duct or one developed in coration with a foreign manuurer.

During the six-hour debate Lars de Geer, the Defence uster, told the Riksdag that was difficult for a small ntry to develop a new "platn" or weapons system. In of the soaring costs involved eden has had to abandon the m it has tried to implement e World War II, that of hasising its neutrality by ufacturing its own basic ponry.

While the Riksdag irrevocably ected the light attack/trainer ject, variously known as the A and the A-38, it did not de what kind of aircraft the Force will have in future interpretations of the ion actually passed vary.

he Swedish Commander-inef, General Lennart Ljung, instructed to examine and ort by next February on rnative procurement policies the Air Force. The first would involve purchase of at least eight wings of the fighter version of the Viggen, the development of a new attack version of the aircraft and the construction of a Swedish "armed trainer" capable of carrying anti-ship missiles.

The second would provide the Air Force with at least 10 wings of the Viggen fighter and allow for the procurement of a trainer with very limited weapon-carrying capacity. General Ljung will report his conclusions to a new Government formed after the September general election.

The largest party, the Social Democrats, favour the first alternative. It would entail a substantial reduction in the 2,000-strong research and development staff at Saab-Scania, as the "armed trainer" envisaged would not be ordered for several years.

Opposes

The Centre Party, which opposes the development of a new attack version of the Viggen, advocates the construction in Sweden of a simpler attack aircraft than the B3LA system proposed by Saab-Scania. The centrists are bitter that their former coalition partners, the Liberals, have joined with the Social Democrats to scuttle this idea, but the Liberal Government claims that the possibility is still allowed for in the directive to General Ljung.

Out of this confusion Saab-Scania has so far emerged with a Government contract to "define" yet another version of the Viggen, a modification of the JA-37 fighter with improved attack capability. It is also pursuing its own preliminary study into the design of a new armed jet trainer.

The company accepts that some lay-offs in its research and development staff are inevitable but the size of the reduction will depend on its success in obtaining new civil aircraft projects and on the decisions to be taken next year about the long-term Air Force procurement programme. Mr. Sten Gustafsson, the group managing director, has stated that by the end of the 1980s half the work of the aerospace division must be on civil projects. This compares with less than 10 per cent at present.

Saab-Scania already has two contracts to supply parts to foreign civil aircraft and is discussing more ambitious participation in a couple more new projects, but if it is to keep at least the core of its design team it will soon have to decide whether or not to go ahead with its own small feeder aircraft project. This, it is calculated, will involve an investment of at least SKr 500m ($115m).

Known as the "transporter" this aircraft has grown in concept over the last two years from the original idea of a rugged "flying truck" capable of carrying freight or 20 passengers between landing strips in developing countries. The latest design is a larger, 30-passenger, twin turbo-prop commuter aircraft, retaining the short take-off and landing capability. It most closely resembles the Short SD-330.

Extensive market research lies behind the modification of the design. Saab-Scania interviewed about 125 operators in 16 or 17 countries before deciding that developed countries with a growing demand for commuter air services offered a better target. The biggest market potential would be in the U.S.

Saab-Scania is unlikely to start this project without at least one major foreign partner who would participate in both development and production and could offer a home market. It has been talking to several potential partners in both the U.S. and Europe.

The company has also been discussing a "junior partnership" in the aircraft Fokker has been planning as a replacement for its F-28 Fellowship. Talks with Airbus Industrie are also continuing, although to judge by a statement to a Swedish newspaper from an Aerospatiale executive, Saab-Scania's chances of participating in Airbus projects were reduced when Sweden rejected the French Exocet missile for use by the Navy.

Saab-Scania has a contract worth about SKr 100m to make the inner wing flaps for the new version of McDonnell Douglas DC-9 and a contract with British Aerospace to provide the moving parts for the tail and wing of the 146 feeder jet. The initial order for the 20 aircraft so far authorised by the British Government is worth about SKr 60m to Saab-Scania. These subcontracts entail very little development work.

The contract with British Aerospace was made possible by Swedish Government financial support. This was also instrumental in helping Volvo Flygmotor obtain an agreement with General Electric of the U.S. to co-operate in the development of a new jet engine—the CF6-32—for Boeing's new airliner, the 757.

Flygmotor's involvement amounts to some 6 per cent of the whole project and will cost the Volvo subsidiary about SKr 250m, of which the Government is putting up half in the form of a loan repayable if the new engine makes a profit.

Flygmotor is already working with another American company, Garret, to develop its jet engine now powering several small business aircraft for use in military or larger civil aircraft. Flygmotor has also been talking to Rolls-Royce.

The most positive development for the Swedish aerospace industry this year has been the Government's decision to place a contract for the development of a new anti-ship missile with the Saab-Bofors Missile Corporation, a new company set up by the two Swedish weapons manufacturers. This contract was awarded under strong protests from the Navy which had already negotiated procurement of the U.S. Harpoon missile.

The missile, known as the RBS-15, is still in the research and development stage but the contract stipulates that it must be fully operational with the Navy by 1985. The current specification is for a sea-skimming, turbo-jet-powered missile with a "launch and leave" capability. It will have electronic counter measures in its homing head.

The first contract for the Navy will be worth about SKr 650m for the two Swedish concerns, of which Saab-Scania will receive the larger share as the main contractor for the research and development. A second phase, in which the missile would be adapted for use by the Air Force, could involve an even larger contract.

Saab-Scania still has a healthy work load with the Viggen, which should keep its production staff employed well into the second half of the 1980s. The current procurement programme entails the building of 330 Viggens, of which 150 would be the fighter version just going into service with the Air Force.

The company will be demonstrating this version at the Paris Air Show. It is still in the running for an order from Austria, where its main rivals are the French Mirage and the Northrop F-5E.

William Dullforce
Nordic Correspondent

Finance on a grand scale

TH AN estimated $40bn ly to be spent by the ld's major airlines over the t few years on the purchase new jet airliners of all kinds uite apart from the substansums that will also be comted on smaller types such "commuter liners," feeders and executive jets—it is r that the airline industry's ands on the world's capital kets will be massive.

here is not thought likely e much difficulty, however, reputable airlines to get finance they need. For at sent, they are in a rowers' market, with major ks and other financial anisations competing for the iness that is available as the quipment tide swells in aviation.

here are several reasons for . First, there is a substantial ume of cash available for ding at this time. Secondly, civil aviation business is as sonably secure an investt as any financing institu could want. Outside the (where airlines are comcially independent) most or airlines are in some way another directly connected h the Governments of the ntries in which they are ed—either wholly or parly Government-owned, or arded as flag-carriers to the ent that the Governments prepared to guarantee ch of the investment the ines concerned require. This ures that money lent to the ine to buy new equipment reasonably risk-free—there e been few instances of h guarantees either being udiated by Governments in ent years or of the airlines cerned reneging on reipment agreements through kruptcy or other causes.

n some cases also, the ernments concerned have jor stakes in the developnt of the aircraft—a particucase is the European A-300 bus and its smaller partner, A-310—and therefore are pared to help guarantee ns for purchase as a means ensuring that their investnts in aircraft production are ured and enhanced.

Moreover, the aircraft themves, in the present climate of rld air transport expansion, readily realisable assets in event of any loan being minated for any reason. The nand for modern aircraft, ecially wide-bodied jets, is such that delivery dates are already lengthening into the 1980s, and it is possible for would-be purchasers to pay deposits to secure positions on the production lines which can be sold at a profit before the aircraft is completed and delivered, in the event of the original buyer either changing its mind or not being able to complete the deal for any reason.

Fears that the financiers supporting the current flood of new aircraft orders could be caught by a sudden downturn in airline activity, especially one generated by a major oil crisis stemming from acute shortage coupled with continued severe price rises, must always be at the back of everyone's mind. But, it is argued that while the current fuel problems are a cause of concern, they are not likely severely to disrupt the present re-equipment tide, but rather help to accelerate it.

The reasons are that by far the majority of the present generation of jet airliners is ageing—many of them have been in service since the mid-to-late 1960s—and are now becoming increasingly unacceptable in terms both of noise and fuel efficiency. The new generation of aircraft are considerably quieter, designed to meet both known and yet-to-be-devised Government noise legislation through the end of this century. They are also much more fuel-efficient, using up to 30 per cent less fuel in some cases than the ageing jets they are replacing.

While the airline industry would of course have preferred to be without the current fuel shortages (with which, incidentally, it is coping well) and their concomitant price rises, these problems have emerged at a convenient time, when a new generation of aircraft is also becoming available to help meet with them. It seems likely, therefore, that the retirement of the existing ageing fleets is likely to be accelerated, and the procurement of the new generation of aircraft boosted, so as to gain as soon as possible the economic benefits the new quieter and more fuel-efficient aircraft provide.

It is probably as much this factor, as the need for airlines to remain competitive, that has brought about so many new orders over the past 18 months, and which is likely to make 1979 an even bigger year for jet-buying than 1978, when over 700 new jets were firmly committed for delivery in the early 1980s.

With all these factors in mind, the financial institutions worldwide are eager to help would-be purchasers acquire the new-generation equipment. There is now hardly a major bank anywhere in the world that is not in some way or another involved in aircraft finance, and it is common for groups of banks to participate in any one airline's financing needs.

Spread

This is because the volume of cash required can be substantial. With an A-300 Airbus costing upwards of $33m, including initial spares, an order for a fleet of ten can cost anything upwards of $350m, especially if such things as flight simulators and other equipment are included. The aim among the financing institutions, therefore, is to spread the load, and the risk, as widely as possible.

At the same time, Government-sponsored credit insurance organisations have moved into aircraft finance in a substantial way—the Export Credits Guarantee Department in the UK, for example, and its counterparts in France (COFACE) and West Germany (Hermes). One example of this kind of support was the recent $100m loan package arranged by Midland Bank International in conjunction with banking consortia in France and West Germany to finance an A-300 Airbus order for two aircraft for Cruzeiro do Sul of Brazil, in which the ECGD, COFACE and Hermes are all involved. This was the first ECGD-guaranteed loan in support of an Airbus Industrie contract (although the Department has of course for some time participated in other airliner deals) since the UK Government formally rejoined the Airbus Industrie consortium with a 20 per cent stake last January 1, and it is expected to be followed by many other comparable deals as Airbus orders rise in the months and years ahead.

In addition to these organisations, the U.S. Export-Import Bank of Washington is also available to lend money to airlines for purchases of U.S.-built aircraft and engines and a number of major loans have been made in recent months to airlines such as British Airways, for example. A statement recently by the Ex-Im Bank chairman, Mr. John L. Moore, indicated that it would spend at least $4.5bn over the next two financial years to support foreign purchases of U.S.-built commercial aircraft and egines, accounting for about half of its resources for the period. But the Ex-Im Bank has also reviewed its policy, and henceforth will tend to reduce the volume of support it makes for aircraft where there is little or no serious foreign competition, and step up support where there is such competition. One example is in engines, where the Rolls-Royce RB-211 is offering tough competition to General Electric and Pratt and Whitney. Where there is such competition, said Mr. Moore, "the bank will do as much as is necessary to match foreign financing offers." In the UK, there is Airlease International Management, a body set up by a group of banks and other institutions to help finance both aircraft lease and purchase. Some of the major aircraft manufacturers, such as McDonnell Douglas, have their own financial organisations designed to help would-be customers acquire their products. In the U.S. in particular, leasing of aircraft is a major facet of the financing of new fleets, and most of the leading banks in the U.S. already have extensive business with domestic airlines, including many of the major "trunk" operators, and this is now extending overseas.

The competition in the financing of the new fleets is now such that some airlines can afford to shop around for the most favourable terms. One major airline in the Middle East recently made it clear that it was doing this, not only with sources of finance but also with the types of aircraft that it had in mind.

The various "packages" that are put together by the banks and other financing organisations vary widely according to the airline involved, its own financial and operational standing and its relationship with its Government, and the type of aircraft it is seeking. It is thus impossible to generalise on financing terms—each package is different. But no airline anxious to get into the new generation of jets need be hampered by lack of cash.

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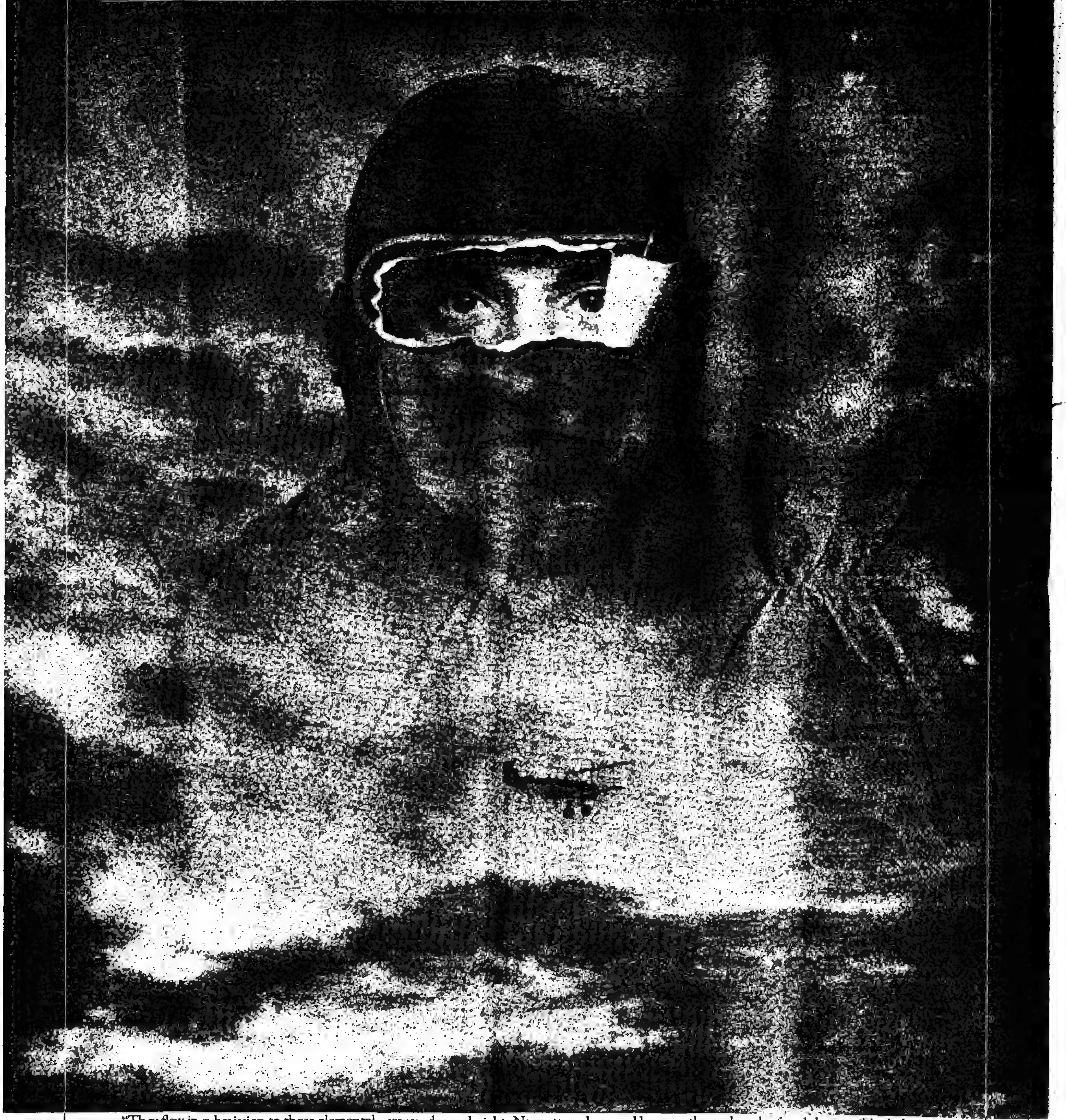
One day we will rip away the "blinding barriers of darkness."

"Night Flight" by Antoine de Saint Exupery, 1932



"They flew in submission to those elemental divinities—day, night, mountain, sea and storm."

They were the men who pioneered night flying in the 1920s, and upon whom Saint Exupéry based his heroic and tragic character, Fabien.

Fabien fought for his life in a flying machine with little more than an engine and a radio.

Had he been given the "vision" Singer gives pilots today, the story of "Night Flight" might have taken a different turn.

For the "vision" Singer provides is an inertial navigation system that lets a pilot know where he is at all times...in the calm, in the storm, day and night. No matter where and how he turns. Because it gathers all its information internally, rather than on radio waves or external reference points.

In fact, this system can be seen in the new F-16 at the Paris Air Show. The pilots will train in simulators designed by our Link Division, which celebrates its 50th anniversary this year.

As one watches the F-16 take off and climb vertically 30,000 feet before reaching the end of the runway, think of Fabien.

Certainly that thrust, guided by the Singer system, could have delivered him from the cyclone he faced that terrible dark night.

Although the risks are steadily decreasing, very few endeavors still hold out the spirit and sense of adventure of flying.

For this reason, Singer has produced a 30-minute film version of "Night Flight" starring Trevor Howard, Bo Svenson and Céline Lomez. It has been highly acclaimed in Europe and the U.S. And we think you and your family will enjoy reliving the night Fabien set out from Patagonia to Buenos Aires with the night mail. It is a tribute to the ability of man to rise to enormous heights in the call of duty.

SINGER

During the Paris Air Show at Le Bourget, you can see "Night Flight" in the Air Museum.

هكذا عند الاصل

A close look at the DC-10 story

BY MICHAEL DONNE, Aerospace Correspondent

The search for the cause of the crash of an American Airlines' DC-10 at Chicago, killing 273, now appears to be moving into other areas, as more of the world's fleet of 274 McDonnell Douglas DC-10 tri-jet airliners complete their engine-mounting inspection and are cleared back into passenger service.

Much of the aircraft was destroyed in the accident, but enough parts were recovered, including the flight-data recorder and the crew cockpit voice recorder, to enable the scientists and technicians of the U.S. Federal Aviation Administration, the National Transportation Safety Board, and of McDonnell Douglas and General Electric, the airframe and engine makers, to piece together during the coming months precisely what caused the crash soon after take-off.

The initial decision by the FAA to ground all the 139 DC-10s in the U.S. fleet—which was automatically complied with by all other DC-10 operators outside the U.S.—was the immediate reaction of any competent airworthiness authority, given reasonable grounds for suspicion of possible causes of the accident. In this case it was the broken bolt from the pylon-wing attachment mounting found on the runway close to the take-off point of the DC-10.

The pylon

When the inspection of such bolts on all DC-10s began to show further signs of faults or damage in other parts of the entire engine-pylon-wing mounting assembly, the justification for the FAA's original ruling became apparent. It also justified the authority's second order, requiring further grounding and inspection not just of the pylon-wing attachment itself, but of the whole structure securing the engine to the wing.

In the DC-10, the engine is attached to the wing by means of a pylon, through which all the fuel and electrical systems run. This pylon is attached to the wing by various yokes, including what is called a "thrust link"—a small metal spar, attached at one end to the wing and at the other to the pylon. In this spar there are two "bushes," or cylinders of metal, which are in effect vibratory thrust-absorbers and which are in turn fastened to the spar by bolts, one for each bush.

It was one of these bolts that was found broken on the runway close to the take-off point of the ill-fated DC-10. This bolt is not a load-bearer. If it came loose, it would not in itself cause the engine to fall off, but over a period of time would probably result in excessive vibration from the engine through to the wing structure.

In addition, in the entire engine-pylon-wing mounting assembly, there are some 80 small "fasteners" attached to secondary structures, but again not in themselves load-bearing. In the checks conducted so far on the world fleet of DC-10s, some broken and loose bolts have been found, together with some damaged fasteners.

In all, such defects, according to reports from the U.S., appear to have been found in some 15 to 30 DC-10s in the U.S. fleet, but in only two aircraft elsewhere. In the rest of the aircraft checked (well over 200 by late yesterday), no faults of any kind appear to have been found, and the aircraft concerned have been returned to service.

As the checks have progressed, the officials of the FAA have been revising their first suspicions as to the cause of the Chicago accident. Originally, they undoubtedly thought that the broken bolt found on the runway might have been the cause, which was why they ordered checks on all bolts. But as those inspections turned up other faults (with fasteners, and in some cases also corrosion in the engine-pylon-wing mountings) the FAA decided to order the second mandatory inspection.

At the same time, however, as it became clear that the broken bolt was unlikely, by itself, to have caused the engine to fall off the wing, the new theory was that it was actually sheared off by the engine itself coming off. This is why emphasis shifted to inspection of the entire engine-pylon-wing mounting structure. The purpose was to determine whether there was any metal fatigue or other problem in that installation which might have caused the accident and might be a continuing safety hazard to all other DC-10s flying. As more and more DC-10s are cleared for passenger service, even this theory has to be regarded with caution.

NUMBER OF FATAL ACCIDENTS PER 100,000 FLYING HOURS (1968-1977)

Aircraft	Accidents
Lockheed L-188 Electra	0.58
Convair 580, 600 and 640	0.25
Convair 888	0.15
Lockheed L-1011	0.12
Boeing 707	0.11
Douglas DC-9	0.11
Boeing 747	0.08
Douglas DC-8	0.07
McDonnell Douglas DC-10	0.06
Boeing 727	0.05
Boeing 737	0.04

Source: U.S. National Transportation Safety Board

Another factor tending to support the belief that the accident may have had other causes is the sequence of events leading up to it. For example, the controller in the tower at Chicago is reported to have seen fuel being vented from the port engine of the DC-10 before take-off, causing him to ask the pilot "do you want to come back?"—and getting no reply, presumably because the crew were too busy with an emergency. Clearly, an experienced controller who had seen many DC-10 take-offs, saw something sufficiently untoward to make him ask that question.

Only seconds later came the much-reported "damn" from the cockpit, followed by the engine coming off, and the crash. To have one engine fall off at full take-off thrust at such a low altitude is regarded by pilots as virtually uncorrectable. To lose power at take-off in one engine is one thing; to have the engine actually detach itself from the wing is another.

If that sequence of events, as reported at the time, subsequently proves to have been correct—something which only the technicians investigating the crash can ascertain—it would seem to imply that something other than faulty bolts or fasteners was seriously wrong with the aircraft's port engine from the moment it began its take-off run.

It is this which the detailed technical investigation must establish. Doing so may take many months of painstaking research, subjecting every part of the aircraft to physical examination, while also studying the airline's own detailed maintenance records, and the operational history of the specific aircraft involved.

This investigation, of the kind conducted by every country's airworthiness organisation in the event of a major accident, is not necessarily intended to apportion blame—although that is something the legal experts will be particularly concerned with, for it could have a profound impact upon subsequent insurance claims and other litigation.

Primarily, the investigation must determine whether or not there is any intrinsic design fault or other weakness in the aircraft concerned, requiring more fundamental corrective techniques than visual inspections of engine-pylon-wing mounting structures. Until that investigation is completed, the best that any airline, or airworthiness authority, can do is to take such precautionary action as seems appropriate, regardless of the bad publicity, the confusion, and the delays to airline schedules that such action causes.

Concern

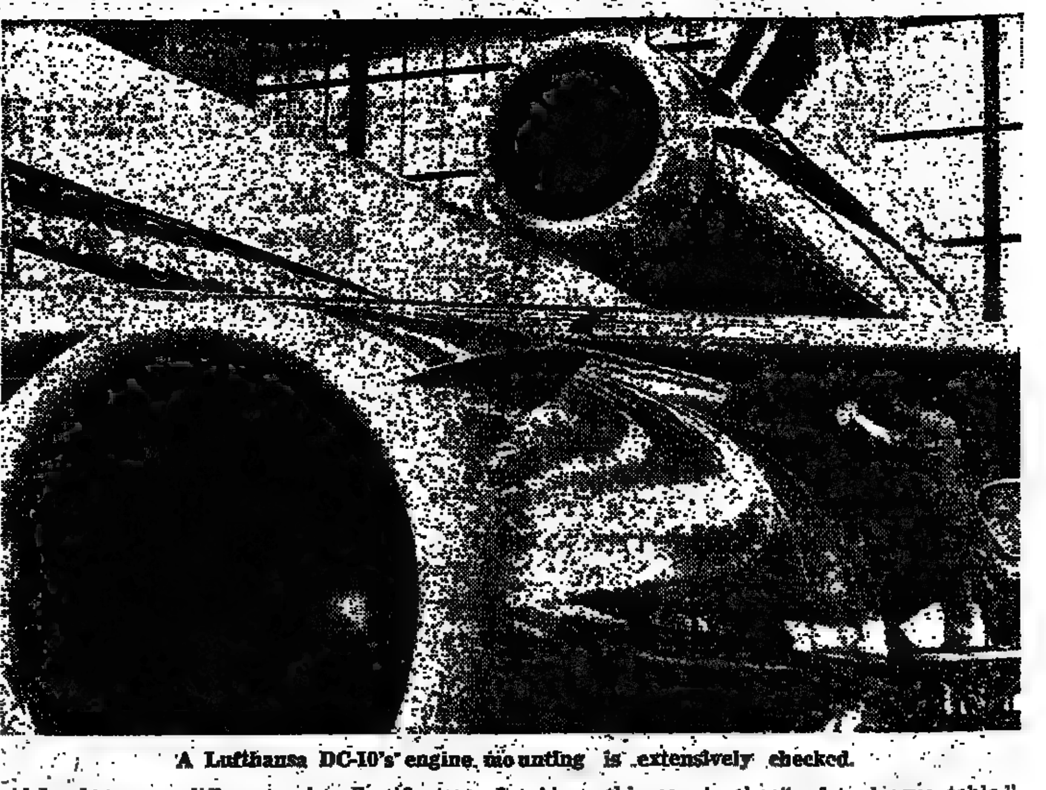
In the UK late last week, it was felt that despite some of the statements reportedly emanating from officials of the FAA, concerning "grave and potentially dangerous deficiencies" in the DC-10, insufficient was known about the causes of the crash for anyone to take a specific stand on the matter. But, the results of the inspections conducted so far must give rise to some concern.

It seems fair, since damaged bolts and fasteners have been coming to light as a result of the checks over the past week, to question whether airline maintenance techniques in some places have been as meticulous as they ought to have been. So far as the DC-10 is concerned, the bolts and fasteners so widely publicised this past week are generally inspected every 4,800 flying hours, or every nine to 12 months, depending upon how much the individual aircraft is used. DC-10s will now be inspected every 100 flying hours or 10 days, whichever is soonest, until the accident investigation clarifies matters.

Overhaul intervals vary widely between different aircraft and different parts of those aircraft, and while specific "times-between-overhauls" are laid down by manufacturers, and approved by airworthiness bodies, it is impossible for them to monitor every airline's checks on every aircraft throughout the world all the time. Much has to be left to the good sense and safety-consciousness of the individual airline. In this context, it is also fair to point out that while some members of the FAA itself this past week have been critical of the DC-10, it was that body which went over the DC-10 in the first place several years ago with a fine toothcomb. It then granted the original full Certificate of Airworthiness, clearing the aircraft for passenger service.

In this context, it is also worth pointing out that, despite two terrible crashes—that of a Turkish Airlines' DC-10 near Paris some time ago, and that recently at Chicago—the U.S. National Transportation Safety Board's own figures show the DC-10's safety record hitherto to be better than that of many other U.S.-built airliners, as the accompanying table shows. It is based upon a number of accidents involving fatalities per 100,000 flying hours, over the period from 1968 to 1977, and which, before the Chicago crash, put the DC-10 in ninth place in the "safety league table."

The list must be treated with some caution, for some of the aircraft involved fly far more than others—the short-haul jets such as Boeing 727s and 737s fly more sectors than, say, the medium-to-long haul TriStar, 747 or DC-10. As a result, it would be wrong to pass judgment on one aircraft's safety record over another's. But if the table shows anything at all, it is that despite major accidents such as that at Chicago, the overall safety record of the world's scheduled airlines and major aircraft types is not as bad as some of the reports over the past week would appear to indicate.



A Lufthansa DC-10's engine mounting is extensively checked.

Letters to the Editor

Index-linked pensions

From the Secretary General, Civil Service National Whitley Council, Staff Side

Sir,—Mr. Pilch (May 17) made what may seem to be a reasonable attempt to answer some of the criticisms levelled at public service pensions. Perhaps that was to be expected from the chairman of an organisation, the National Association of Pension Funds, which claims to represent the interests of both pension providers and pensioners.

He is quite right in saying that no reasonable person would want to deprive policemen, nurses, firemen, the armed forces and the other public services covered by the Pensions Increase Act 1971 of the benefit of the Act. What is the benefit of the Act? We hear a lot about index-linking, inflation-proofing, post-award dynamism and escalation of pensions. What these terms hide rather than reveal is the real purpose of the Act which is quite simply, and quite reasonably, surely, to maintain the purchasing power of pensions in payment—not to increase their value, not to increase the standards of living of pensioners, but simply to maintain the value of the pension at the time it was awarded, and to avoid pensioners slowly falling into hardship by the ravages of inflation.

This is a requirement which is so clearly essential to the wellbeing of pensioners that it is one of the main features enshrined in the new state pension scheme, a scheme which over the next 19 years will become the main source, either directly or indirectly through guaranteed minimum pensions, of inflation proofed pensions for the vast majority of pensioners in this country.

No reasonable person can quarrel with the notion that it is right to aim as a minimum to maintain the purchasing power of pensions, and yet Mr. Pilch suggests that the public service arrangements should be changed in a way which could have this effect, if the Parliamentary approval he suggests should be necessary on occasions, was not forthcoming. The system Mr. Pilch suggests is not really so very different from that which obtained from the passing of the 1971 Act. Before 1971, a special Act of Parliament was needed each time to increase public service pensions, a system which Mr. Kenneth Baker MP, in introducing the 1971 Act, said required pensioners to come "cap in hand" to Parliament each time for an increase. A humiliation to the pensioners which he said the Act was designed to end, as well as serving as an example to all occupational schemes of the kinds of standards they should provide.

But in any case how would this change help those in occupational pensions schemes which are inadequate to the task of providing a reasonable and sure level of income in retirement? If the Government, which has acted so generously on police pay, was to take away from policemen their index-linked pensions how would that help those pensioners who rely on insurance companies to provide their occupational pensions; companies, which have flatly refused to consider funding for inflation?

So, who really is the villain in this piece? The nurse looking forward to a reasonable income in retirement which will not lose its value, or the insurance companies who say they can provide a pension but will not accept responsibility for maintaining its value? There are privately invested schemes which are prepared to take on the risk and there are many schemes which come close to matching the rise in prices, but if some pension providers will not accept the responsibility for at the least maintaining the purchasing power of their pensions in payment, is not the lesson which Mr. Pilch should have drawn, with his protector of pensioners hat on, that privately invested and particularly insurance based pension schemes are not perhaps the right vehicle for providing adequate and secure incomes in retirement? Taking increases away from public service pensioners will not improve that position.

W. L. Kendall.
Civil Service
National Whitley Council,
19 Rochester Row, SW1

Special salary increases

From Mr. A. Fishman.

Sir,—Mr. Pasfield (May 31) suggests that index-linked pensions should be made available to all employees, not just those in the civil service. I would recommend an alternative which would be consistent with Mr. Pasfield's theme but which would avoid further aggravating the gulf between different sections of society.

My alternative is to abandon index-linked pensions for the civil service in return for which a special salary increase would be awarded equal to the Government Actuary's figure for the proportion of salary index-linked benefits represents. I would add an extra 1 per cent to this figure for good measure.

The beauty of this method is that those not participating in index-linked benefits would regard this approach as a bargain as would those who are enjoying such benefits and who have in the past strenuously defended the Government Actuary's calculations.

This measure would also be anti-inflationary and result in a snowball effect in a direction opposite to current trends.

A. S. Fishman.
Amberley Lodge,
13, Beechwood Avenue,
Finchley, N3.

An impossible task

From Mr. T. Layborn

Sir,—When it was announced that the Government Actuary had suggested that the value of civil servants pensions being index-linked was, in his opinion, worth 2.6 per cent of their salaries, my first reaction was to immediately write a strong letter of protest that the figure, which I regarded as much too low, should have been arrived at by one man — aided no doubt by many of his colleagues but all of whom are civil servants. On second thoughts I decided to wait a while and see the reaction of others whose views you would no doubt be publishing.

These have appeared and I have enjoyed reading them, but I think some important points have so far not been mentioned. The Expenditure Committee of the House of Commons in its eleventh report dealt at length with this subject in "Chapter VI Pensions." An eminent actuary Mr. Geoffrey Heywood considered the figures should be 5 per cent and others thought the figure should be much higher. The following sentence taken from the report is worth repeating:— "One man ultimately has this awesome responsibility and has hardly any chance of getting it right, which is no criticism of the Government Actuary but is a criticism of a system which sets him an impossible task."

Is the 2.6 per cent to be deducted from the public sector employee's gross salary? If so, then in the case of the higher paid employee his net loss is negligible and the Chancellor of the Exchequer as well as bearing the cost of the inflated pension, loses a certain amount of tax at the individual's top rate. No insurance company will quote to provide inflation increases entirely open-ended and the Inland Revenue will only allow funding at a maximum rate of 8½ per cent.

The quotations I have obtained from insurance companies for index-linking at 3, 4, 5 and 8½ per cent all make the figure of 2.6 per cent reduction in the pay (gross?) of a public sector employee seem like a pipe-dream. The calculations made by the Government Actuary are apparently based on a number of assumptions, but in arriving at this type of figure can any assumption be realistic? Take the inflation figures of the last few years and consider what is happening now in the areas of oil, transport, gas, electricity and so on. The assumptions made by the Government Actuary are that a rate of interest of 9 per cent can be earned on investments, that salaries will only rise annually at 7½ per cent and prices by only 6 per cent. In the light of present economic conditions these assumptions are not valid. When it comes to giving a guarantee to some 750,000 civil servants, the additional cost to the taxpayer of an under-estimate can be a very serious matter. Any fund in the private sector which gave such unlimited guarantee based on similar costings would be heading for bankruptcy.

Had the House of Commons in 1971 any idea of what the future held forth in the field of inflation, the Pension Increases Act 1971 would never have been passed and probably never even been drafted. It must also not be overlooked that senior civil servants play an important part in framing Government policy and expenditure which are important factors in controlling inflation.

Now that we have a new Government, I look forward to action being taken and that at the very least a ceiling say of 8½ per cent should be introduced. This would encourage all employed in the public sector to effect savings and eliminate waste which today exists in all directions. A ceiling of 8½ per cent could be costed fairly accurately and employees in the private sector (provided the profits permitted) could be placed on an equal basis with those engaged in the public sector.

Is it not time that the reports of the Pay Research Unit and the PRU Board were published? Surely the public has a right to be informed in detail of their deliberations and apart from index-linking of pensions as to the value placed on job security.

T. A. E. Layborn,
5, Heath Rise,
Kersfield Road,
Putney Hill, SW15.

VAT returns in a rush

From Mr. S. Blanche

Sir,—The VAT computer is now back in action and return forms for the tax period 72 ended March 31 will be sent to traders as soon as possible. These returns were due by April 30 so the date is being extended to June 11.

It is quite appalling to those of us having to deal with these returns, that we are now faced with colossal work pressure due to the strike action by civil servants, working within a protected cloak of unsackability and inflation proof pensions.

It is a scandal that the authorities concerned should be allowed by Parliament to act in such a cavalier manner. I trust that the new political flavour of the Government will put a stop to this nonsense in future.

S. Blanche,
Blanche and Co.
Thames House,
Wellington Street,
Woolwich, SE18.

Works of art and tax

From Mr. D. Mahon.

Sir,—Mr. Hugh Leggatt (May 31) is entirely correct in implying that the surrender of works of art and cultural property "in satisfaction of tax" is in essence no more than a decision in exceptional circumstances by the state to protect our common heritage by accepting payment in kind instead of in cash. Moreover the principle that the state, in order to further such protection, may refrain from raisinng all the revenue in cash to which it would in ordinary circumstances be entitled has long been established by an administrative provision that sales of works of art to public museums carry certain reductions in tax liabilities.

The short-sighted and badly thought-out policy of the late Government for the repeal of the provisions for surrender "in lieu" would have had the effect of neatly getting Treasury pseudo-theologians out of a situation in which they had to sustain the convoluted and implausible contention that "in lieu" acceptances, though not formally and in law purchases from tax debtors, should nevertheless be deemed to be such for accounting purposes—with the consequence that acceptances become involved in expenditure priorities.

There are widespread hopes that the Minister for the Arts (to whose constructive attitude on the subject Mr. Leggatt refers) will be successful in securing the definitive abandonment of an egregious fiction which is capable of causing untold damage to the future prospects for our cultural inheritance.

Denis Mahon.
33, Cadogan Square, SW1.

Today's Events

U.K.: Post Office Engineering Union conference, Winter Gardens, Blackpool (until June 8).

Bakers Union conference, Margate (until June 6).

Lecturers' pay talks resume.

Liberal Party and Labour Party statements on European Parliamentary elections — Mr. James Callaghan, Labour Party chairman, speaks at rally, Islington Town Hall.

Stock Exchange turnover figures released.

Lord Armstrong, Midland Bank chairman, gives Institute of Directors lecture on a more logical way of presenting the nation's budget.

Crown Agents Tribunal resumes.

Levy of 60p applied on securities transactions over £5,000.

Sir Kenneth Cork, Lord Mayor of London, lunches with Royal Warrant Holders' Association (Dorchester Hotel).

Cutlers' Hall, Warwick Lane, and Fishmongers' Hall, London Bridge, open day.

International Wool Textile Organisation Conference, Grosvenor House, London (until June 8)—Princess Anne attends opening dinner at Guildhall.

Bugatti Owners' Rally, Prescot Hill, Cheltenham.

Overseas: Third day of Pope John Paul II's visit to Poland (until June 9).

Italian general election — second day.

Canada's minority Government takes office.

King Juan Carlos and Queen Sophia of Spain on official three-day visit to Morocco at invitation of King Hassan.

Non-aligned movement's executive meeting in Colombo to discuss Pakistan's application for membership (until June 9).

OFFICIAL STATISTICS

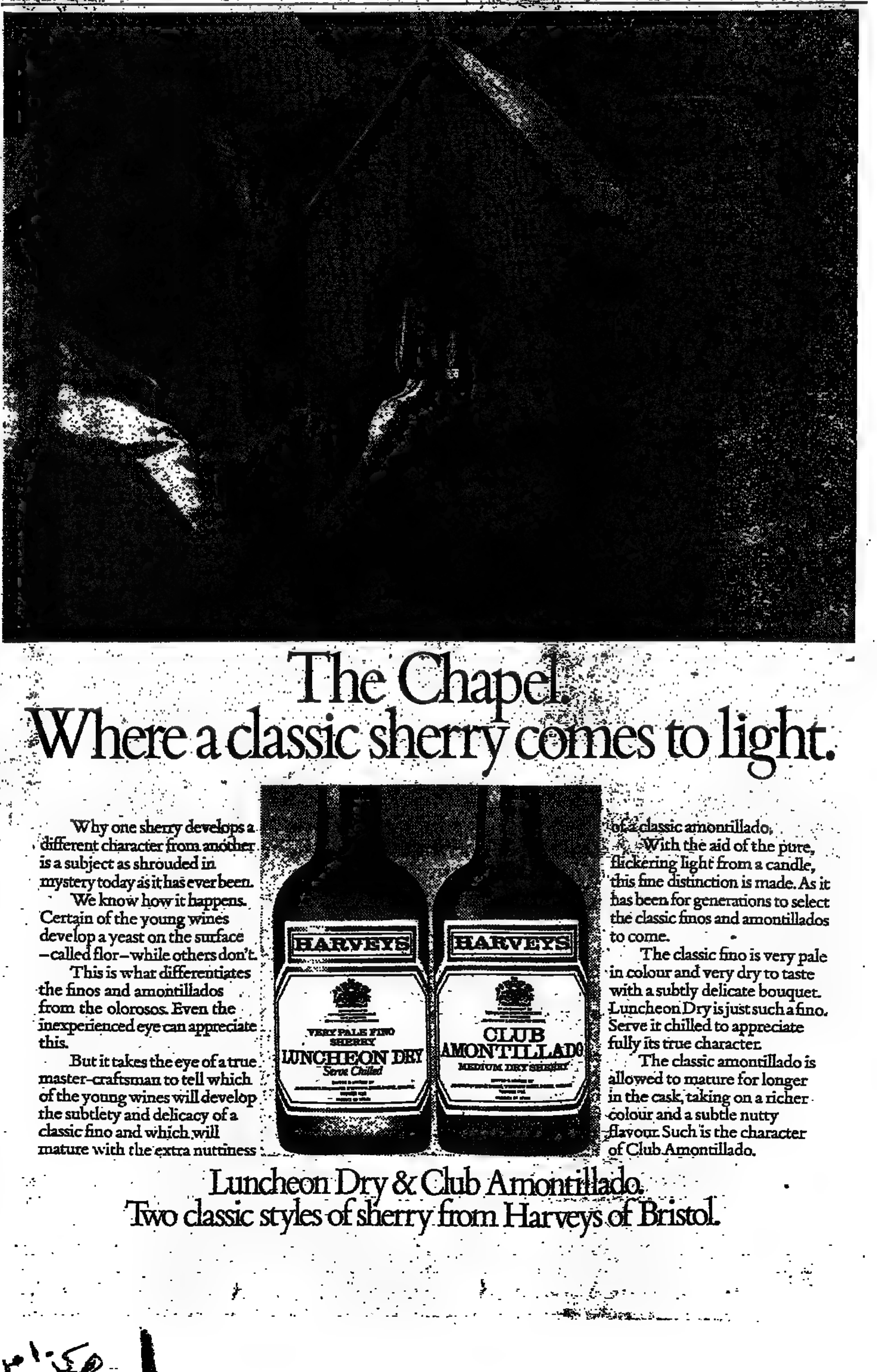
Treasury publishes U.K. official reserves for May. Department of Industry publishes investment intentions of the manufacturing, distributive and service industries (1979 and 1980). Bank of England releases capital issues and redemptions (during the month of May).

COMPANY RESULTS

Final dividends: Pritchard Services Group, Soamana Group. Interim dividends: Albert Fisher Group, Martin The Newsagent.

COMPANY MEETINGS

See Financial Diary on page 17.



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The classic fino is very pale in colour and very dry to taste with a subtly delicate bouquet. Luncheon Dry is just such a fino. Serve it chilled to appreciate fully its true character.

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Luncheon Dry & Club Amontillado.
Two classic styles of sherry from Harveys of Bristol.

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Mr. Robert Guy, Director, N. M. Rothschild & Sons Limited

Mr. M. Carstensen, Senior Manager, Dresdner Bank AG

Mr. Christopher Glynn, Chief Commodity Analyst, Precious Metals, Consolidated Gold Fields Ltd.

Mr. R. Schriber, First Vice President and Head of Precious Metals, Credit Suisse

Mr. Philip Taylor, Mining Investment Analyst, Rowe & Pitman

Mr. Woo Hon Fai, President, Chinese Gold & Silver Exchange Society of Hong Kong

Mr. T. R. N. Main, Secretary-General, Economic Affairs Advisory Committee, Chamber of Mines of South Africa

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A FINANCIAL TIMES CONFERENCE

'Green Petrol'—a possible palliative for the oil crisis

BY DAVID FISHLOCK, SCIENCE EDITOR

A NEW energy term—"gasohol"—has begun to appear in newspaper headlines. This is an American word meaning a mixture of gasoline (petrol) and pure alcohol, suitable for fuelling a *motor car. Gasohol* received a surge of publicity when it went on sale recently in New York.

However, the idea of blending alcohol with petrol as a transport fuel is not so new. Many in Britain will still remember Cleveland Discol, a gasohol advertised by Cleveland Oil in the 1950s, made with alcohol it bought from Distillers. Racing car drivers were enthusiastic customers. In its day Distillers has made alcohol for industry both by distilling surplus whisky in times of *recession, and by fermenting* molasses. Since the late 1960s, however, when it sold its chemical interests to British Petroleum, it has restricted its interest strictly to drinkable products.

Potable brands

Alcohol—also known as ethyl *alcohol or ethanol—is* made in two basic ways: by fermentation in the case of all credible forms of potable alcohol, or by chemical reaction from a feedstock derived from oil. The newly discovered interest in adding alcohol to petrol to eke out oil supplies is confined to the fermented forms of alcohol which make no demands upon oil.

Several nations are showing great interest in making power alcohol from crops in the time-honoured way used for potable brands. Almost any crop except wood can be used. But national reasons for building a "green petrol" industry can be surprisingly different from country to country.

The most highly publicised of the nations which have ventured into "green petrol" is Brazil, which has a dauntingly high balance of payments deficit arising from the rapid rise in OPEC oil prices. The Brazilian Government has therefore made it a tenet of its energy policy to run cars on a 20 per cent alcohol blend with petrol. Last year it claimed that 15 per cent of its cars were already *running on* gasohol. Currently production of "green petrol" is running at about 1m tonnes a year and the Government's target is 3m tonnes a year by 1982.

The initial source of Brazil's alcohol is molasses, a brown, syrupy by-product of the production of sugar, traditionally used to make rums with the heavy aromas. Well-established practice has been hastily adapted to meet the Government's demands. But even from Brazil's vast sugar-cane industry *there is nothing like enough of* the molasses by-product to meet the Government's target for gasohol.

Now they are beginning to look at cane juice, the sugar solution squeezed from sugarcane in processing. A Brazilian spirit called *pinga*, distilled in pot stills, has long been made in this way. The latest move is arousing much interest among sugar refining manufacturers, who are offering to build packaged distilleries designed to pump cane juice—14 per cent sugar solution—directly into *fermenters and thence* to the distillation columns.

Thailand sees "green petrol" from a significantly different viewpoint. It has a Minister for Industry who is keen to control the effects on his economy of annual variations in harvests. If Thailand's surplus crops could be channelled into a single product such as power alcohol it would take a lot of the uncertainty out of an agricultural economy, and the Government would have a powerful economic regulator. The minister is therefore inviting bids for the supply of turnkey distilleries of the kind being tendered for cane juice in Brazil, but readily adaptable to whichever of its main crops—sugarcane, molasses, rice, cassava and maize—may happen to be in surplus.

Sudan affords yet another rationale for setting up a power alcohol industry. It is building a vast sugarcane industry in a particularly fertile triangle between the White and the Blue Niles. The Kenana sugar project is scheduled *to start operating at the end of* this year. But deep in East Africa, nearly a thousand miles by rail from a seaport, the molasses by-product is an embarrassment. It may even have to be dumped in the desert—unless it can be fermented to make power alcohol.

In each of these cases the economics of making green petrol will be finely balanced. Brazil, for example, used to export more than 500,000 tonnes of molassess a year. Its disappearance into Brazilian distilleries has caused the world price of molasses to rise to a level where it may become tempting to start exporting again.

The U.S. is already wrestling with the economics of gasohol. More than 500 petrol stations—mainly in the cornbelt of the Midwest—are already in the gasohol business, selling a blend *containing 10* per cent alcohol. Optimists at the U.S. Department of Energy estimate that national gasohol consumption could reach 75m-100m gallons this year. Others believe this to be a *ludicrously high figure*, considering that only two distilleries at present are supplying the market. One big source of the alcohol is maize grown for animal feedstuffs—that is, mainly for its protein content. The starchy component, incidental to this product, is being fermented to make green petrol at a distillery in Illinois.

Technologically, power alcohol affords some exciting new possibilities for the chemical processing industries. Distillation itself is one of the oldest methods of alchemy for separating liquids with *different* boiling points. Potable alcohol—of which Scotland alone distils about 146m gallons a year in the form of whisky—is obtained by distilling liquors produced by fermenting the appropriate crop in batches.

When sugarcane juice is fermented in batches, as is done today, the yield of alcohol is *about 7 or 8 per cent by volume.* Potable spirits will vary quite widely around a mean value of about 40 per cent. But alcohol suitable for blending with petrol must be anhydrous—free *from* water — and *therefore* requires a three-stage distillation, with the final one yielding virtually 100 per cent pure ethyl alcohol.

Continuous

According to Tate and Lyle, if cane juice could be fermented *continuously instead* of in batches, there could be significant gains in the productivity of the process, and a large reduction in size of the distillery. At its research centre near Reading the company has been operating continuous fermentation on pilot-plant scale for the last few weeks. With alcohol concentration set at about 12 per cent, *the process is promising a* productivity 2.5 times as high as batch operation, and a fermentation plant only about one-tenth the size.

Tate and Lyle, as the world's biggest refiner of sugarcane, has an obvious interest in pursuing new outlets, not least since the profitability of sugar refining itself is low. But sugarcane is one of the most efficient ways of converting and storing solar energy to be found in nature, and much better than anything the physicists have managed to make. It is already established as a *100m* tonnes-a-year crop, with the potential for considerable expansion in those areas—such as Sudan or the Amazon Basin—with abundant *sunshine and* water.

Sugarcane has another important advantage, in that the bagasse — the fibrous by-product remaining once the cane juice has been squeezed out—is a valuable fuel, in spite of 50 per cent moisture. It is already used to fuel many sugarcane factories. A tonne of bagasse is equivalent to 1 barrel of oil.

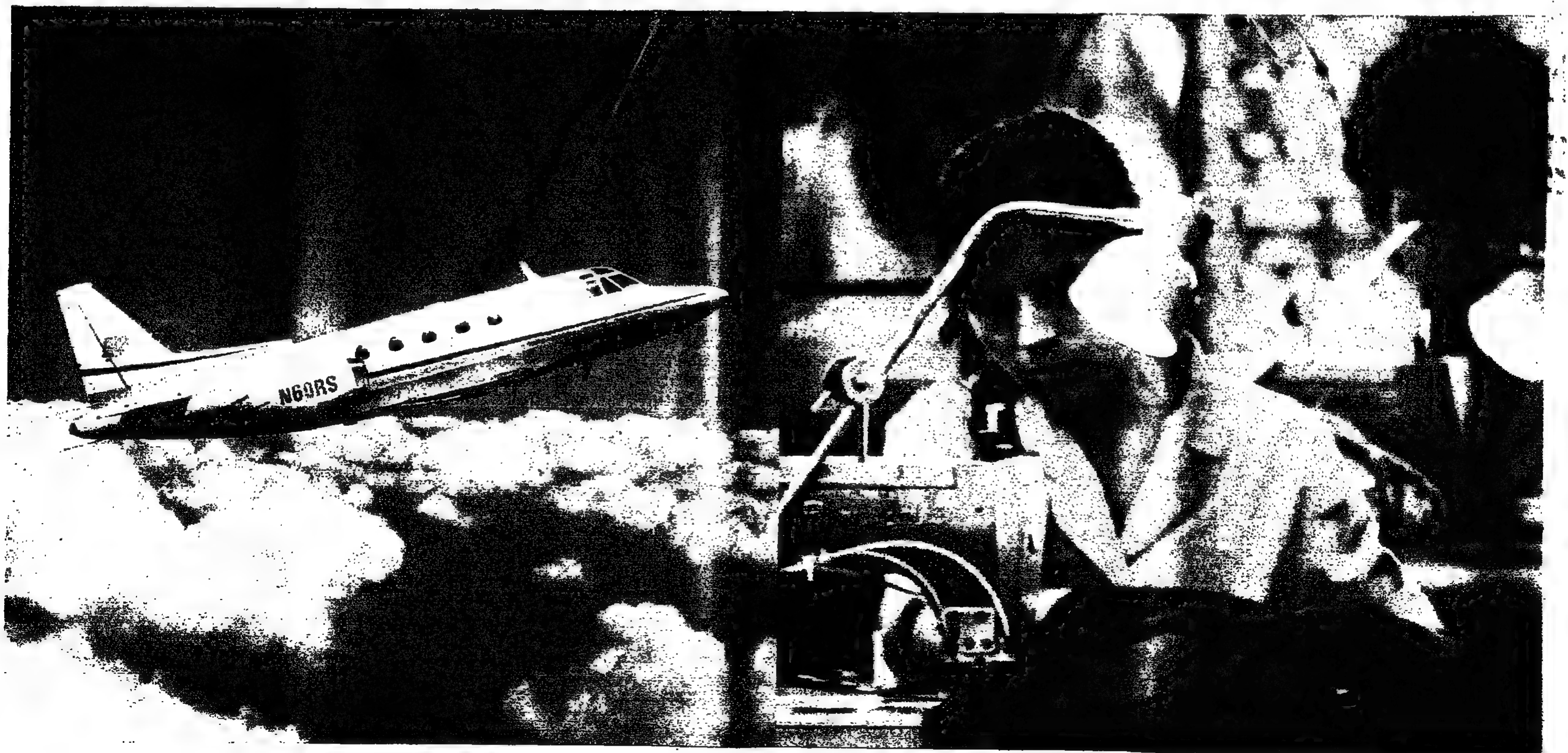
No market

Other crops may afford much greater advantage in a specific situation. Cassava (a root otherwise known as tapioca or manioc) is as efficient a solar converter as sugarcane and a staple foodstuff throughout the tropics. But *there* is no international market in cassava at present to match that of sugarcane, and no combustible residue to provide fuel for distillation.

In Britain, the Department of Energy has *been studying* the possibilities for "energy cropping" for two or three years. The verdict—expected in a report this autumn—is unlikely to favour domestic production, where land *needed for* energy crops would be in competition with land needed for food—and Britain already imports half its food.

Selling advanced technology overseas to enable other countries to exploit energy crops appears to make much more sense for Britain. At Bromley in Kent, Tate and Lyle Engineering has built up in the 1970s a substantial new business for the group in marketing group processing technology worldwide. Dr. Michael Bennett, deputy managing director, *sees* autonomous distilleries in the form of turnkey projects at around £9m, a time as a major new market just beginning to open in such countries as Brazil, Thailand, Sudan and the U.S. The business is beginning to move so fast, he says confidently, "we'll have a plant commissioned somewhere in the world this year."

This article appeared in an early edition of last Tuesday's Financial Times.



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BUSINESSMAN'S DIARY

UK TRADE FAIRS AND EXHIBITIONS

Date	Title	Venue
Current	USSR National Exhibition (01-637 2400) (until June 10)	Earls Court
Current	Walpadex '79 (0782 314429) (until June 6)	Cunard International, W6
une 6—8	Print Fair '79 (01-253 9355)	Royal Lancaster Hotel, W2
une 12—14	British Carpet Trade Centre Fair (01-236 0913)	London, W8
une 13—15	Motradex Management Service Exhibition (0325 60466)	Bristol Exhibition Centre
une 13—23	Antiques Fair (01-499 6363)	Grosvenor House, W1
une 19—21	Marine Electronics Exhibition (02802 5226)	Metropole Centre, Brighton
une 19—21	Electronic Test and Measuring Instrumentation Exhibition (01-902 8833)	Wembley Conference Centre
une 24—28	Art Trade Exhibition (04024 46471)	Exhibition Centre, Bristol
une 26—29	Microforum Europe '79 (01-405 6233)	Wembley Conference Centre
une 27—July 1...	International Fisheries and Marine Equipment Exhibition—EUROCATCH (01-353 4885)	Olympia
une 30—July 1...	Aldershot Tattoo and Exhibition (0252 24431)	Aldershot
uly 8—12	Autumn Lightshow (0248 88396)	Nat. Exhibition Centre, B'ham

OVERSEAS TRADE FAIRS AND EXHIBITIONS

une 5—9	Frozen Food Industries Exbn. (01-486 1951)	Tokyo
une 6—16	All-British Energy Exhibition (021-705 6707)	Peking
une 8—July 1....	International Transport Exhibition (IVA '79) (02013 4450)	Hamburg
une 9—15	International Foundry Fair (01-409 0956)	Dusseldorf
une 9—17	33rd International Aeronautics and Space Exhibition (01-439 3964)	Paris
une 10—19	International Technical Goods Fair (01-215 7877)	Poznan
une 13—15	South West Housewares Show	Dallas
une 14—17	International Exhibition for Pharmacists—IPHARMEX '79	Basle
une 16—19	10th Hellenic Fashion Fair	Athens
une 16—20	Advanced Communications Exbn. and Conference	Copenhagen
une 16—22	International Exbn. and Congress for Metallurgical Equipment and Technology (01-409 0956)	Dusseldorf
une 17—23	Chemical Engineering Exhibition and Congress	Frankfurt
une 19—21	International Microcomputers, Minicomputers and Microprocessors Exhibition—IMMM '79	Geneva
une 25—29	International Construction and Public Works Exhibition—CONPEX-ASIA (01-681 7688)	Singapore

BUSINESS AND MANAGEMENT CONFERENCES

urrent	University of Bradford Management Centre: Effective Advertising Management (Bradford 42299) (until June 8)	Heaton Mount, Bradford
une 4	Oyez-IBC: Partnership Into Unlimited Company (01-242 2481)	Europa Hotel, W1
une 4—7	IPM: The Elements of Salary Administration (01-387 2844)	Whites Hotel, W2
une 4—July 13...	Urwick Management Centre: General Management (Slough 34111)	Slough
une 4—5	MSS Computer and Business Consultancy: The Executive Secretary (0903 34755)	Worthing
une 4—8	Kepner Tregoe: Decision Making for Senior Management (0628 38033)	Berystede Hotel, Ascot
une 4	British Institute of Management: The World of Management Today (01-405 3456)	Connaught Rooms, WC2
ne 5—7	BACIE: Validation Interpretation (01-636 5351)	Regents Park, W1
ne 5	IPS: Purchase Analysis—The Buyers Assessment of Value (Ascot 23711)	Sudbury House, EC1
ne 5	Inbucon: Added Value of Men and Materials (01-353 3651)	London Press Centre
ne 5	ABACUS: "Bargain Offers"—The New Restrictions from July 2 (01-629 6040)	Mount Royal Hotel, W1
ne 6—7	Lloyd's of London Press: The Bill of Lading Conventions (01-623 7100)	Tower Hotel, E1
ne 6	ABACUS: Effective Accountancy For Solicitors (Northampton 881300)	Mount Royal Hotel, W1
ne 6—7	BCI: Czechoslovak Economy and Industry (021-454 6171)	Birmingham
ne 7	ESC: New Developments in EEC Financial Reporting (057-382 2711)	Brussels
ne 7	CAET: Trading Overseas—How to Use Foreign Currencies to Become More Profitable and Competitive Without Incurring Exchange Risks (01-580 7179)	Waldorf Hotel, WC2
ne 7—8	PLI: The U.S. Antitrust Laws	Cologne
ne 8	CCC: Delays and Variations in Construction Industry (01-222 6363)	Albany Hotel, Glasgow
ne 11	Brian Purry and Associates: Technology of Recruitment and Selection (0480) 64933	Strathdon Hotel, Nottingham
ne 11—12	New York Management Centre: Project Management (01-937 3163)	Hilton Hotel, W1
ne 11—15	University of Bradford Management Centre: Corporate Planning in Practice (Bradford 422999)	Heaton Mount, Bradford
ne 12	The Welding Institute: Avoiding service failures in welded construction (0223 891162)	Eurocrest Hotel, Coventry
ne 12—13	FT Conference: World Gold in the 1980s (01-236 4382)	Montreux
ne 13—14	The Institute of Chartered Accountants: Computer Auditing (01-628 7060)	St. John's Hotel, Solihull
ne 13—14	Oyez-IBC: Fluid Contamination Control (01-242 2481)	Amsterdam

WEEK'S FINANCIAL DIARY

The following is a record of the principal business and financial engagements during the week. The board meetings are mainly for the purpose of considering dividends and official indications are not always available whether dividends concerned are based mainly on last year's timetable.

MONDAY, JUNE 4

COMPANY MEETINGS—

Currys, 46-50 Uxbridge Rd., Ealing. 12.30
Gibbs (Antony), 3 Frederick Place, Old Jewry, EC. 12.00
Laird Group, Quaglino's, Bury St., SW. 12.00
Matthews Wrightson, 14-20 St. Mary Axe, EC. 12.00

BOARD MEETINGS—

Finals:
Pritchards Services
Sogomana
Interims:
Fisher (Albert)
Martin the Newsagent

DIVIDEND & INTEREST PAYMENTS—

Bell (Arthur) 1.76785p
Bentalls 1.01794p
Bradwall (F.M.S.) Rubber Estate 1.7p
Cedar Invst. Trust 1.1p
Chersonese (F.M.S.) Estates 1p
Currys 4.069231p
Dentsply Int. 22cts
Lilley (F.J.C.) 1.675p
London, European 0.6p
Mid Sussex Water Db. 7¼pc
Mitchell Cotts 0.65625p
Modern Engineers of Bristol 1.84p
North British Canadian Invst. 2.05p
Scottish TV A Ord. 1.4379p (inc. supp. dist. of 0.0192p)
Walsall 9¾pcRd. 1977-79 4⅞pc

TUESDAY, JUNE 5

COMPANY MEETINGS—

Berwick Timpo, 79 Wells Street, W. 12
Beattie (James), 71-78 Victoria St., Wolverhampton. 2.30
Caird (A.), Reform Street, Dundee. 12.00
Electrical & Industrial Secs., Connaught Rooms, WC. 12.00
Gill & Duffus, 201 Borough High St., SE. 12.00
Mettoy, Winchester House, 100 Old Broad St., EC. 12.00
Provident Financial, Norfolk Gardens Hotel, Bradford, W. Yorks. 12.00
Rowntree Mackintosh, Joseph Rowntree Theatre, Haxby Rd., York. 3.00
Rugby Portland Cement, Crown House, Rugby. 12.05
Rush & Tompkins, Charing Cross Hotel, W. 2.30
Sheffield Brick, Royal Victoria Hotel, Sheffield. 11.30

BOARD MEETINGS—

Finals:
Atkins Bros. (Hosiery)
Carless Capel and Leonard
De La Rue
[illegible]
London and Overseas Freighters
Parkland Textile
Scotcros
Sketchley
Somric Clothes
Interims:
Tanks Consolidated Invs.
Muirhead
North British Steel
Northern Foods

DIVIDEND & INTEREST PAYMENTS—

Aquascutum Ord. A 1.114p
Aquascutum 7½pcPf. 1.75pc
Bambers Stores 1.2566p
Beattie (James) A Ord 3.14061p
Boosey & Hawkes 3.7670p
Ercona Proposed Red. of 7¼pcLn. at 90pc plus accrued interest
Gillette 40cts
Hambro Life Assurance 17.0824p
Peaford Inc. 24cts
Sheffield Brick 2.385p
Tameside 10¼pc Rd. 1984-85 5⅛pc
Wilkinson Warburton 3.85p

WEDNESDAY, JUNE 6

COMPANY MEETINGS—

Bellair Cosmetics, New Road, Winsford, Cheshire. 11.00
Clarke (Clement), Clifton Ford Hotel, Welbeck St. 12.00
Continental Union Trust, Winchester House, 77 London Wall, EC. 12.45
Ellis & Goldstein, Barrington House, Wood St. 12.00
Guardian Royal Exchange Assurance, 20 Aldermanbury, EC. 12.00
Harrison (T. C.), The London Road, Sheffield. 2.00
Morris & Blakey Wallpapers, 211 Piccadilly W. 12.00
Pearl Assurance, High Holborn, WC. 12.00
P.&O., P.&O. Building, Leadenhall St., EC. 12.00
Shaw (Francis), Corbett Street, Bradford. 12.00

BOARD MEETINGS—

Finals:
Century Oils
Clydesdale (Transvaal) Collieries
Eva Industries
Jones (Edward) (Contractors)
Mountview Estates
Pegler-Hattersley
Sentrust Bapert
Trans-Natal Coal Corporation
West Rand Consolidated Mines
Interims:
Buffelsfontein Gold Mining
Burco Dean
Carr's Milling
Comet Radiovision
McCorquodale
Sterling Trust
Stilfontein Gold Mining
Ward (Thos. W.)

DIVIDEND & INTEREST PAYMENTS—

A.B. Electronic Prods. 2.5p
Alcan Aluminium 50cts
Associated Book Publishers 3.229p
Automotive Prods. Db. 5.2pc
Avon Rubber Db. 3½pc
[illegible]
Cadbury Schweppes Ln. 4½pc
Caird (A.) 9.3957p (inc. supp. div. of 0.125p)
Danish Bacon A Ord 3.56p
Dowding & Mills 0.59p
Ellis & Goldstein 1.152499p
Ford Int. Cap. Corp. Ln. 3⅞pc
Freemans (London, SW9) 1.5195p
Glynwed Db. 3½pc
Greenall Whitley Dbs. 2½, 3¼pc
Ladbroke Grp. Ln. A (with warrants) 4¼pc
Mallinson-Denny Db
Metal Closures Db. 3¼pc
Newhome Veritas Db. 4¼pc
Rockware Db. 3½pc
S.G.B. Db. 4½pc
Sale Tilney 2.9356p
Watney Mann & Truman Db. 3½pc

THURSDAY, JUNE 7

COMPANY MEETINGS—

Glynwed, Headland House, New Coventry Rd., Sheldon, Birmingham. 3.00
Mole (M.), Crindau Works, Albany St., Newport. 11.00
Owen Owen, Clayton Square, Liverpool. 11.30
Pitney Bowes, The Pinnacles, Harlow, Essex. 12.15
Reed (Austin), 103-113 Regent St., W. 12.00
Standard Chartered Bank, Connaught Rooms, WC. 12.00

BOARD MEETINGS—

Finals:
Airflow Streamlines
Brent Walker
Culter Guard Bridge
Dorasakande Rubber Estates
Guthrie Corpn.
Harrisons and Crosfield
600 Group
Warren Plantation
Interims:
Cowie (T.)
Elson and Robbins
Finlay (James)
Hickson and Welch
Morgan Crucible

DIVIDEND & INTEREST PAYMENTS—

Central & District Properties Db. 3½pc
Chubb & Con Lns. 4¼pc
Guardian Royal Exchange Assurance 6.9415p
Highland Distilleries 0.55p
Intercom 142Fr
Lloread 1p
SKF Aktiebolaget Kr 4.5
Travis & Arnold 3.486p
Turner & Newall 7p
Viscose Development 2.875p

FRIDAY, JUNE 8

COMPANY MEETINGS—

Goldman (H.), Glider House, Claremont Rd., Cricklewood, NW. 4.00
Haden Carrier, 7-12 Tavistock Sq., WC. 3.00
Hunting Gibson, Avenfield House, 118-127 Park Lane, W. 10.00
Lead Inds., 14 Gresham St., EC. 12.00
Petrocon, Petrocon House, Rosemount Ave., West Byfleet, Surrey. 12.30
Prince of Wales Hotels, Prince of Wales Hotel, Lord St., Southport. 12.00
Taylor Woodrow, 52 St. Catherines Way, E. 12.00

BOARD MEETINGS—

Finals:
Bishop's Stores
First Castle Secs.
[illegible]
Interims:
French (Thomas)
Grootvlei Proprietary Mines
Marievale Consolidated Mines

DIVIDEND & INTEREST PAYMENTS—

AMF 31cts
Ault & Wiborg 1.44p
British Inds. & General Invst. Trust Dfd. 1.5p
CBS Inc. 65cts
Citicorp Overseas Financial Corp. Gtd Floating Rate 1984 28.27
Clarke (Clement) 1.3679p
Copydex 1.711p
Cullens Stores Ord. A 0.67p
Dart Inds. 45cts
East Rand Gold & Uranium 25cts
Free State Geduld Mines 155cts
Gibbs (Antony) 1.48115p
Henriques (Arthur) 1.548p
London & Provincial Poster 5.66p
McKechnie Bros. 2p
Ottoman Bank 310p
Petrocon Group 3.3601p
President Brand Gold Mining 115cts
President Steyn Gold Mining 65cts
Purolator Inc. 33cts
Reed Executive 4.112153p (inc. supp. dist. of 0.024853p)
Reed Int. 5pcPf. 1.75pc. 7pcPf. 2.45pc. Lns. 2¼, 3¼pc
Texaco Inc. 54cts
United Carriers 1.94849p
Welkom Gold Mining 42.3cts
Western Hldgs. 270cts

SATURDAY, JUNE 9

COMPANY MEETINGS—

Nurdin & Peacock, Richmond Hill Hotel, Richmond Hill, Richmond, Surrey. 11.00

DIVIDEND & INTEREST PAYMENTS—

Bridon Dbs. 4, 5¼pc
Edinburgh Var. Rate 1983 £6.4375
General Motors Corp. 165cts
International Business Machines Corp. 344cts
Johnstone (W. F.) 7cts
Kensington & Chelsea Var. Rate Rd 1982 £6.4375
Travellers Corp. 52cts
Warner-Lambert 33cts

SUNDAY, JUNE 10

Barnes Group Inc. 30cts
Grace (W. R.) 47½cts
United Technologies 55cts

INVEST IN

50,000 BETTER TOMORROWS!

50,000 people in the United Kingdom suffer from progressively paralysing MULTIPLE SCLEROSIS—the cause and cure of which are still unknown—HELP US BRING THEM RELIEF AND HOPE.

We need your donation to enable us to continue our work for the CARE and WELFARE OF MULTIPLE SCLEROSIS sufferers and to continue our commitment to find the cause and cure of MULTIPLE SCLEROSIS through MEDICAL RESEARCH.

Please help—send a donation today to:

Room F.1., The Multiple Sclerosis Society of G.B. and N.I.,
4 Tachbrook Street, London SW1 1SJ

COMPANY NOTICES

DICTAPHONE INTERNATIONAL CORPORATION
DICTAPHONE CORPORATION
NOTICE
TO THE HOLDERS OF 5¾% GUARANTEED CONVERTIBLE DEBENTURES DUE 1ST MARCH, 1988

Dictaphone Corporation of Rye, New York, U.S.A., originally the Guarantor of the debentures described above (the "Debentures") under a Fiscal Agency Agreement dated as of 1st March, 1968 (the "Agreement"), assumed all of the obligations of Dictaphone International Corporation under the Debentures and the Agreement pursuant to a Supplemental Agreement dated 28th June, 1974 (the "1974 Agreement"). Under the Agreement and the 1974 Agreement, each Debenture was convertible into shares of the Common Stock of Dictaphone Corporation.

As the result of a merger effective 11th May, 1979, Dictaphone Corporation into a wholly-owned subsidiary of Pitney Bowes Inc., of Stamford, Connecticut, U.S.A., each outstanding share of the Common Stock of Dictaphone Corporation was converted into one share of the $2.12 Convertible Preference Stock of Pitney Bowes Inc.

Effective 11th May, 1979, any conversion of the Debentures shall be into the $2.12 Convertible Preference Stock of Pitney Bowes Inc., as provided by a Supplemental Agreement dated 11th May, 1979 (the "1979 Agreement"), pursuant to the provisions of Section 4.06 and 8.01 of the Agreement. No Debenture outstanding on 11th May, 1979, is required to be exchanged for a new Debenture by the holder thereof; instead, any Debenture which may be issued after 11th May, 1979, will be stamped with an appropriate legend to reflect the fact that it is convertible into the $2.12 Convertible *Preference Stock of Pitney Bowes Inc.*

The Debentures are currently listed on the Luxembourg Stock Exchange, and will continue to be so listed being quoted under the full name of International followed by that of Dictaphone Corporation, as listed heretofore.

Any notice or demand required or permitted by the Agreement, the 1974 Agreement or the 1979 Agreement shall be sufficiently given or served for all purposes by being deposited postage prepaid by first class mail in a post office letter box, addressed to Dictaphone Corporation at 120, Old Post Road, Rye, New York 10580, U.S.A., or to such other address as may be filed by Dictaphone Corporation with Citibank, N.A., New York, the Fiscal Agent under the Agreement.

A copy of the Agreement, the 1974 Agreement, the 1979 Agreement and the latest Annual Report, Articles of Incorporation and By-Laws of Dictaphone Corporation are available for inspection at the office of S. G. Warburg & Co. Ltd., 30, Gresham Street, London EC2P 2EB, England.

Debentures and the coupons may continue to be presented for payment at the corporate trust office of Citibank, N.A., in New York, the main offices of S. G. Warburg & Co. Ltd. in London, or Banque Internationale a Luxembourg S.A. in Luxembourg as paying agents for Dictaphone Corporation.

DICTAPHONE CORPORATION

4th June, 1979.

TRONOH MINES MALAYSIA BERHAD
(Incorporated in Malaysia)
NOTICE OF MEETING

NOTICE IS HEREBY GIVEN that the third Annual General Meeting of members of Tronoh Mines Malaysia Berhad will be held at the registered office of the Company, Wisma Bunga Raya, 152, Jalan Ampang, Kuala Lumpur, Malaysia, on Thursday, 28th June, 1979, at 10.00 a.m. for the following purposes:

To consider and, if thought fit, pass the following as ordinary resolutions:

1. "That the profit and loss account for the year ended 31st December, 1978 and the balance sheet of the Company at that date and the consolidated profit and loss account for the year ended 31st December, 1978 and the consolidated balance sheet at that date, together with the annexed report of the directors, be and are hereby approved and adopted."
2. "That Y. M. Raja Badrol Ahmad who retires from the board by rotation be and is hereby re-elected a director of the Company."
3. "That Mr. J. G. Richardson who retires from the board by rotation be and is hereby re-elected a director of the Company."
4. "That Mr. C. W. Trosise who was appointed to the board since the last annual general meeting be and is hereby re-elected a director of the Company."
5. "That Messrs. Peat, Marwick, Mitchell and Co. be and are hereby appointed the Company's auditors for the period until the conclusion of the next annual general meeting and that the remuneration to be paid to them be fixed by the board."

A member entitled to attend and vote at the meeting is entitled to appoint one or more proxies to attend and vote in his stead. A proxy need not be a member of the Company.

By order of the Board
CHAN HON KEONG
Secretary

Kuala Lumpur,
4th June, 1979

NOTES

1. A Form of Proxy to be valid must reach the Malaysian Registrars' Office at Wisma Bunga Raya, 152 Jalan Ampang, Kuala Lumpur, Malaysia, or the United Kingdom Registrars' Office at Charter House, Park Street, Ashford, Kent TN24 8EQ, not less than 48 hours before the meeting.
2. There are no directors' service contracts required by the Stock Exchange, London, to be made available for inspection at the meeting.

GERMAN GOVERNMENT INTERNATIONAL 5½% LOAN 1930 (YOUNG LOAN) CONVERSION BONDS

Further to the Notice of Redemption concerning the above Bonds, which was published on 30th April 1979, the Bank of England announce that the Conversion Bonds which have been selected by lot for redemption on 1st June 1979, and Coupon No. 53 in respect of six months' interest due on 1st June 1979, are payable at the following rates:

Nominal amount of Bond	Actual amount at which Bond is payable	Actual amount at which Coupon No. 53 is payable
£100	£383.17	£8.62
£500	£1,915.80	£43.11
£1,000	£3,831.61	£86.21

The above values for the Bonds and Coupons have been established by the Bundesschuldenverwaltung, with reference to Paragraph (c) of Article 13 of the London Agreement on German External Debts dated 27th February 1953 and Article 2 of Annex 1 thereto, by recalculating the sterling amounts due to Bondholders on the basis of the middle rate of exchange for sterling against the Belgian franc ruling for cable transfers in Brussels on 1st June 1979.

The Trustee has advised the Bank of England that it is unable to agree with the basis and method of recalculation of the amounts due which are being applied by the Bundesschuldenverwaltung as from 1st June 1978. The rights of Bondholders to any additional amounts which may become payable have therefore been reserved by the Trustee, irrespective of whether Bonds drawn for redemption and Coupons due 1st June 1979 are presented for payment or not.

In view of the possible adjustment which may be made at a later date, Collecting Agents should retain details of the holders of Conversion Bonds lodged for redemption and of the holders of Conversion Bonds on whose behalf Coupons are lodged.

BANK OF ENGLAND.

4th June, 1979.

We suspect our clients of conspiring to keep us Holland's biggest unknown bank.

It's clear to us that Pierson is obscure to most of you.

Despite our century of successful merchant and commercial banking in Holland and internationally.

Despite our activity in well-known mergers, acquisitions, new issues, stock market introductions and international portfolio management.

Why – we ask ourselves – are we so anonymous?

Could it be that our clients are keeping us a secret? Attempting to keep Pierson's services and servicing exclusively for themselves?

If so, we can't count on reaching you by word of mouth. We're forced to resort to advertising. It seems to be the only way to tell you about Pierson's wholesale services: commercial banking; merchant banking; corporate and private trust; portfolio management for institutions and individuals; corporate finance; foreign exchange and insurance.

And advertising is the only way to tell you about our knack in handling complex financial needs.

And, most important, about Pierson service. Because we're relatively small, we keep in close contact with our clients. We become personally involved in your business. And therefore more apt to find inventive ideas for your financial growth.

But don't think size limits our international capabilities. Pierson has offices in the major financial centers. Worldwide and long-standing banking, legal, fiscal and accounting connections. Plus experience in the international capital markets.

Naturally, there's a lot more to tell. But we'd rather do it face-to-face. Contact your closest Pierson office for a meeting. If that's not feasible, write for more information:
Mr. Tom van Manen of our Marketing Department,
214 Herengracht, Amsterdam, The Netherlands.

Who knows? Soon *you* may be one of the people not talking about Pierson.

PIERSON, HELDRING & PIERSON N.V.

Get to know the bank whose main service is service.

The Netherlands: Amsterdam (Head Office), The Hague, Rotterdam and Haarlem.
Foreign branches and subsidiaries, representative offices, trust offices and affiliates in: Bermuda, Curaçao (N.A.), Guernsey (Channel Islands), Hong Kong, Jakarta, London, Luxembourg, New York, San Francisco, Zurich and Tokyo.

Sears begins well and expansion plans continue

THE current year has started satisfactorily for Sears Holdings despite the bad weather and the economic conditions which affected some of its activities in the early months, Mr. Leonard Sainer, the chairman, says in his annual statement.

Sears, the footwear, stores, jewellery, property and engineering group which owns Selfridges and bookmakers William Hill, is dependent to a large extent on consumer spending particularly in the second half-year.

But Mr. Sainer tells shareholders he is confident that with its wide spread of activities it is in an advantageous position to obtain an above average share of the consumer market.

With *the group's financial re*sources and strong property base providing a securre background from which to trade and expand the directors continue to seek further acquisitions in Europe and the U.S. to *improve* on results now flowing from its businesses overseas.

In the year to January 31, 1979, turnover, excluding VAT, exceeded £1bn for the first time, Mr. Sainer notes. Pre-tax profit rose from £65.51m to a record £91.06m.

Two main factors contributed to the increased trading profit of £56.8m in footwear retailing and manufacturing, Mr. Sainer says. There was a noticeable change in clothing fashions which stimulated the buying of a wider range *of footwear as well as a swing to*wards better quality, mainly leather, footwear.

However the industry is currently facing an acute world shortage of leather creating an unprecedented increase in prices *which may well result in a wider* use of synthetics in the future.

The year was again marked by heavy investment in modernisation and general improvement of branches and this programme continues both in the UK and in the Netherlands. The voluntary undertaking given, along with most other footwear retailers, to restrict margins for 1978 and 1979 to those of 1977 has had the effect of making Sears invest *more and* work harder to achieve its results.

In common with other London West End stores and hotels, Selfridges had a quieter year with fewer foreign tourists enabling the directors to restore the balance by increasing attention to the home trade. The programme of building and modernisation is now largely complete. The refurbishing of Lewis's stores has also continued enabling it to hold its place in the extremely competitive market.

For Miss Selfridge trade was disappointing and with the young fashion trade becoming more competitive much effort has been put into ensuring that the 52 Miss Selfridge outlets remain a leading young fashion group.

Results of the jewellery retailing interests — including Garrard and Mappin and Webb —were satisfactory.

In engineering, the year was a further period of expensive reorganisation which should put this division in good stead for the future and for improving its profitability, Mr. Sainer adds.

The improvement of facilities at many depots should enhance the motor vehicle division's *position in the trade, while in* licensed betting offices, efforts are continuing to provide improved services including the resiting, expansion and modernisation of many of the older betting shops.

In an improved home UK housing market, 846 units were sold against 714 the previous year and present indications on the property development and investment side show a con*tinued high level of interest by* purchasers.

The group's U.S. subsidiary, Sears Industry Inc. achieved a trading profit of £1.8m compared with a previous loss of £1.2m.

Total source of funds in the year rose from £109.34m to £133.75m and application from £68.91m to £108.41m with the increase in working capital dropping from £40.43m to £25.34m.

Success for S & P pensions

A successful year is reported for three of the pension investment funds managed by the **Save and Prosper Group.** Total value of the **Equity Pension Fund** for the year to March 5, 1979, rose by £2.7m to £4.1m, with the unit price increasing by 25.9 per cent over the year.

The managers increased the content of UK equities which stood at 78.5 per cent of the value of the fund at the end of the year. U.S. shares continued to sell at historically low levels and the opportunity was taken to increase U.S. holdings from 6 per cent to 12 per cent of the fund's value. A cautious attitude was *taken* over Japanese holdings and investments in that country were sold.

Further growth was reported for the **Property Pension Fund** over the same period with the value of the fund jumping from £1.5m to £2.6m and the unit price rising by 23.4 per cent over the year. During the year, a freehold shop property in Harrogate was added to the portfolio and contracts have been exchanged for the purchase of a freehold industrial unit in Exeter.

This completion will bring the number of holdings in the portfolio to 13 freehold properties all let on leases with upward rent reviews at five or seven-year intervals.

The value of the **Company Pension Scheme,** which invests in a *mix* of fixed interest, equities and property through the separate funds advanced over the year from £2m to £3.6m. At the year-end, 35 per cent was held in gilts, 31 per cent in equities and 14 per cent in property. Overall liquidity was increased to 20 per cent largely due to the higher liquidity in the underlying funds.

Better year for Tootal

THE PROSPECTS for Tootal in the current *year are reasonably* good and the Board expects improved pre-tax profits and a reduction in financial gearing, Sir George Kenyon, the chairman, says in his annual report.

Sir George makes his comment on prospects "not because of any real hope of improved trading conditions, but because the accumulation of many small improvements added to the new acquisitions will strengthen the *group as a whole.*"

The effects of disruptions in January will continue to be felt in the first half of this year, but the multi-fibre agreement is now beginning to assist the textile industry and there are encouraging signs of increased activity.

The group has a strong coherent base with substantial and balanced overseas operations roughly equalling UK levels *of activity and earnings, the* chairman says.

For the year ended January 31, 1979, pre-tax profits amounted to £21.1m against £21.7m previously, on sales of £401.38m compared with £361.2m. On a CCA basis, pre-tax profit is reduced to £10.6m after adjustments for depreciation, £9.8m cost of sales, £4.7m and gearing, £4m.

The accounts also show a *£44,000 payment on termination* of executive contract.

Group reserves increased by £21.3m to £79.34m and includes the surplus of £10.2m arising from the revaluation of *properties, but takes into account* a reduction of £0.6m in the sterling equivalent of foreign currency assets and liabilities at February 1, 1978, due to movements in exchange rates.

Expenditure on fixed assets during the year amounted to £15.1m, of which £9.6m was in the UK. The acquisition of Ups 'n' Downs in the U.S. increased the book value of fixed assets at January 31, 1979, by £7.4m, but the sale of Actil and Tootal Australia to Bradmill resulted in a reduction of £7.0m.

Sir George will be retiring as chairman at the end of this month, to concentrate on other activities. He will be succeeded by Mr. R. F. Audsley, the present managing director.

Meeting, Manchester, June 27 at noon.

Bentalls starts slowly

Mr. James Spooner, chairman of **Bentalls,** told the annual meeting that the first few months of the current year had been somewhat disappointing.

Sales to date had risen by around 10 per cent, he said, and pointed to the frustration of shopping in Kingston at the present time.

However, with the new shopping developments anticipated, combined with the continued modernisation of the store, he believed the present trend would soon be reversed.

The Bracknell store was keeping up the excellent momentum achived in 1978 and at the newly acquired Chatham store he was *confident that the loss making* trend would be reversed completely in the months leading up to Christmas and the New Year.

All in all Mr. Spooner saw no reason why the group should not have another shatisfactory year.

London & Northern first quarter progress

FIRST QUARTER figures for *London and Northern Group* indicate profits in excess of the same period last year, and Mr. J. H. M. Mackenzie, chairman, tells shareholders he is confident that further progress will be *made in the current year.*

He adds that the group has a satisfactory work load.

As reported on May 10 a 130 per cent increase in second half profits lifted the taxable surplus for the *whole of 1978 from £6.37m* to £11.77m—an 84 per cent rise—on turnover up from £163.9m to £173.8m. The dividend is stepped up from 2p to 3.35p.

Emoluments of Mr. Mackenzie *rose from £39,615 to £59,951.*

Considerable improved results were achieved on the construction side, both at home and overseas, the chairman states, coupled with an overall return to profitability *of the group's housebuilding* operation.

Profits before tax for the division nearly doubled from £3.79m to £7.48m.

The building and plant hire *sector* had a *successful* year, benefiting from increased production facilities and improved demand, with profits showing a gain from £1.65m to £2.16m.

Difficult conditions in the metal reclamation industry, which prevailed in 1977, abated during the year, leading to a considerable improvement in profitability for this side of the group.

Tace, the associated engineering company, reported a recovery in the second half of 1978, which has lead to an encouraging start in the current year, Mr. Mackenzie states.

Steel Stockholding had another *successful* year. And United Scrap *more than doubled* its profits with management figures for the first months of 1979 showing a significant improvement, the chairman says.

A revaluation of group freehold and *leasehold properties as* at December 31, 1978, show a £3.1m surplus over book value.

Meeting, Essex Street, WC, on June 26 at 3 pm.

PIDGEON DE SMITT

Pidgeon de Smitt, members of the Stock Exchange, have agreed to acquire the Ipswich branch office of Hill Osborne and Co.

Mr. C. E. Roberts will become an associate member of Pidgeon de Smitt responsible for the execution and settlement of all transactions.

HALL BROS.

A. H. Hall Brothers has acquired the field survey division of Rank Pullin Controls which manufactures the Watts range of surveying instruments.

Halls, with the technical support of Rank, will be manufacturing the entire Watts range.

Turriff chief sees similar profits for current year

BOTH THE current order book and prospects in the UK at **Turriff Corporation** are better than they were at the same time last year, and Mr. W. G. Turriff, chairman, tells members that, overall, profits for 1979 should be at least maintained.

He says there is increased activity in the oil and gas sector; a good level of construction orders, and significant projects in the refurbishing area. The group's involvement in the *property* development field continues satisfactorily, and the directors anticipate further growth from the plant hire interests.

"We also expect a much better return from our mechanical services division," he states.

Bad weather in the first quarter of the current year, "provided an unwelcome start," he says, and that the resultant loss of output will be difficult to recoup.

Overseas, Turriff is continuing to operate on a limited scale in the United Arab Emirates, but, in the Middle East generally, Mr. Turriff says competition is both *severe* and unpredictable.

The directors continue to examine areas of potential business in other parts of the world, but these are unlikely to have any effect on the current year, he says, "so that overall our overseas workload will fall well short of our earlier expectations."

As reported on *May* 2 taxable profits for 1978 rose from £1.06m to a record £1.23m on a lower *turnover of £31.96m against* £33.87m. The dividend is increased by 23.5 per cent to 2.9085p per share, with Treasury consent. Directors emoluments include £29,000 retirement pay*ments.*

The bad weather disrupted and delayed progress and completion of projects in the construction division, with a consequent effect on costs. "We were thus unable to convert a substantial and sound order book into the sort *of profit which might otherwise* have been expected," the chairman explains.

A lull in the oil and gas industries affected the engineering and pipelines sector. But, further progress was made during the year in mechanical services; a change in the mix of business helped to improve margins also.

Mr. Turriff states that, in trading terms, the overseas activities did particularly well, but profits were adversely affected due to certain contracts being tied to the dollar, resulting in significant adverse currency movements.

Excellent results were achieved at the Abelson plant.

At balance date shareholders' *funds* show a £1.7m *increase to* £5.3m. The group's liquidity position is strong and the chairman says this will enable directors to invest in ventures with good profit potential over the next *few* years.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether dividends are interims or finals and the sub-divisions shown below are based mainly on last year's timetable.

TODAY

Interims:—Albert Fisher, Martin the Newsagent.

Finals:—Pritchard Services, Sogomana.

FUTURE DATES

Interims:—	
Burco Dean	Jun. 6
Thermal Syndicate	July 12
Finals:—	
Belhaven Brewery	July 11
Brent Walker	Jun. 7
Burnett and Hallamshire	Jun. 20
Century Oils	Jun. 6
First Castle Securities	Jun. 8
Jones (Edward) (Contractors)	Jun. 6
Redland	Jun. 28
Rowlinson Constructions	Jun. 13
Triefus	Jun 8
Valor	Jun. 14
Warren Plantations	Jun. 7

FT Share Service

The following securities have been added to the Share Information Service appearing in the Financial Times:

Canada Permanent Mortgage Corporation (Section: Overseas —*Canada*). ***Carlton Real Estates*** (Section: Property). **Gaskell and Company (Bacup)** (Section: Textiles). **Howden (Alexander) Warrants** (Section: Insurance). **Lowland Drapery** (Section: Drapery and Stores). **Moss Bros.** (Section: Drapery and Stores). **North British Properties** (Section: Property). **York Resources** (Section: Mines—Australia).

TO THE HOLDERS OF

Popular Español International N.V.

Guaranteed Floating Rate Notes due 1981

In accordance with the provisions of the above Notes, Bankers Trust Company, as Fiscal Agent therefor, has established the Rate of Interest on such Notes for the semi-annual period ending 30th November, 1979 as eleven and one eighth per cent (11⅛%) per annum. Interest due on such date will be payable upon surrender of Coupon No.6.

BANKERS TRUST COMPANY,
Fiscal Agent

DATED: May 25th, 1979.

SIMCO MONEY FUNDS
Saturn Investment Management Co. Ltd.
66 CANNON STREET EC4N 6AE.
Telephone: 01-236 1425

Rates paid to W/e 3rd June 1979

	Call % p.a.	7 day % p.a.
Mon.	11.454	11.766
Tues.	11.439	11.713
Wed.	11.371	11.662
Thurs.	11.394	11.658
Fri./Sun.	11.049	11.604

FINANCE FOR INDUSTRY TERM DEPOSITS

Deposits of £1,000-£50,000 accepted for fixed terms of 3-10 years. Interest paid gross, half-yearly. Rates for deposits received not later than 8.6.79.

Terms (years)	3	4	5	6	7	8	9	10
Interest %	11¼	11½	11½	11¾	12	12¼	12½	12¾

Deposits to and further information from The Chief Cashier, Finance for Industry Limited, 91 Waterloo Road, London SE1 8XP (01-928 7822, Ext. 367). Cheques payable to "Bank of England, a/c FFI." FFI is the holding company for ICFC and FCI.

This advertisement is issued in compliance with the requirements of the Council of The Stock Exchange. It does not constitute an invitation to any person to subscribe for or purchase any shares.

MFI Furniture Group Limited
(Registered in England, No. 1410499)

Share Capital

Authorised		*Issued and Fully Paid*
£8,000,000	In Ordinary shares of 10p each	£6,600,000

All the issued share capital of MFI Furniture Group has been admitted to the Official List by the Council of The Stock Exchange.

Particulars of the Company have been circulated in Extel Statistical Services Limited and copies of the particulars may be obtained during business hours on any weekday (Saturdays excepted) up to and including 18th June 1979 from:—

COUNTY BANK LIMITED,
11 Old Broad Street, London EC2N 1BB

KEMP-GEE & CO.,
20 Copthall Avenue, London EC2R 7JS

748

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To finance part of a contract awarded by
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Arranged and managed by
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Provided by
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Agent Bank
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Year of Achievement

	Year ended Dec 31 1978	Year ended Dec 31 1977	
Profit before tax	£470,000	£242,000	+ 94%
Profit after tax	£427,000	£206,000	+107%
Earnings per share	4.27p	2.26p	+ 89%

Action taken in 1977 to dispose of unprofitable areas of business and create a sound financial base has paid off with record profit in 1978.

We expect profit in 1979 to be another record with further growth in earnings per share.

—MICHAEL HEATHCOTE
CHAIRMAN

Allied Plant Group Limited
For a copy of the 1978 Report, write to the Secretary, 79 Beverley Road, Hull HU3 1XR.

LOCAL AUTHORITY BOND TABLE

Authority *(telephone number in parentheses)*	*Annual Interest* gross interest	*Annual Interest* payable	Minimum sum	*Life* of bond
	%		£	Year
Knowsley (051 548 6555)	11¾	½-year	1,000	5-7
Redbridge (01-478 3020)	11	½-year	200	4-5
Redbridge (01-478 3020)	11½	½-year	200	6-7
Wrekin (0952 505051)	12	maturity	1,000	2-3

ANDELSBANKEN DANEBANK

ANDELSBANKEN A/S
Copenhagen

U.S. $30,000,000 Floating Rate Capital Notes due 1984

For the six months
4th June, 1979 to 4th December, 1979
the Notes will carry an
interest rate of $11\frac{1}{16}$ per cent per annum.

The Notes are listed on the Luxembourg Stock Exchange

By Morgan Guaranty Trust Company of New York, London Agent Bank.

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AS EUROBOND MANAGER
In their London Office
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Address: One College Hill, London EC4R 2RA.

This advertisement appears as a matter of record only.

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Kuwaiti Dinars 12,000,000
7⅞% Bonds due 1989
(Redeemable at the option of the holder in 1984)
Issue price 99¾%

The National Bank of Kuwait S.A.K.
Merrill Lynch International & Co.

Alahli Bank of Kuwait (K.S.C.)
The Arab Investment Company S.A.A. (Riyadh)
Banque Nationale de Paris.
Burgan Bank S.A.K., Kuwait.
The Commercial Bank of Kuwait S.A.K.
The Gulf Bank K.S.C., Kuwait.
Hill Samuel & Co., Limited.
Korea Associated Securities Inc.
The National Commercial Bank (Saudi Arabia)

The Industrial Bank of Kuwait K.S.C.
Abu Dhabi Investment Company. American Express Bank International Group. Arab African International Bank.
The Arab European Financial Management Co., s.a.k. Arab Financial Consultants Company S.A.K. Arab-Malaysian Development Bank Berhad
The Arab and Morgan Grenfell Finance Company Limited. Arab Trust Company K.S.C. B.A.I.I. (Middle East) Inc. James Capel & Co.
Credit Lyonnais. Citicorp International Group. Dresdner Bank Aktiengesellschaft. European Banking Company Limited.
Euroseas Securities Limited. Financial Group of Kuwait K.S.C. First Chicago Asia Merchant Bank Ltd. Gulf International Bank B.S.C.
Gulf Riyad Bank E.C. I B J International Limited. International Financial Advisers K.S.C. Korea Associated Finance Limited.
Kuhn Loeb Lehman Brothers Asia. Kuwait Financial Centre S.A.K. Kuwait Foreign Trading Contracting & Investment Co. (S.A.K.)
Kuwait International Investment Co. s.a.k. Kuwait Investment Company (S.A.K.) Kuwait Pacific Finance Company Limited.
Manufacturers Hanover Limited. Nederlandse Credietbank n.v. Orion Bank Limited. Riyad Bank Limited.
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مكتبة من الأصل

INTNTL. COMPANIES and FINANCE PENDING DIVIDENDS RECENT ISSUES

Gränges in the black for first time since mid-1975

WILLIAM DULLFORCE IN STOCKHOLM

GES, the Swedish metals ngineering group, is run- t profit for the first time he middle of 1975, Mr. Bo amsson, the managing or, said at the annual ig.

iminary figures for the iarter showed an improve- in earnings of SKr 70m), Mr. Abrahamsson said, it giving further details. g this previous 1979 profit st, he expected a SKr 250m vement in pre-tax earnings ear. This would give an of about SKr 50m before extraordinary items. The group had a turnover of SKr 5.1bn ($1.2bn) last year.

Losses at the pre-tax level totalled almost SKr 1.25bn in the three-year period 1976-78. Since Mr. Abrahamsson took over two years ago, Gränges has unloaded its steel and mining operations to the new semi-state steel company, SSAB, closed down its shipping business and is currently negotiating the sale to Uddeholm of a majority holding in its Nyby stainless steel plant.

This sale is expected to be completed in the near future and would enable Gränges to start repaying some SKr 250m in debt on Nyby and to release further resources for other operations.

The reconstructed Gränges comprises aluminium and copper fabricating and engineering companies, all of which have development potential, according to Mr. Abrahamsson. The group now depended on its own technical competence and business ability rather than on fluctuations in world raw material prices.

) and K sees return to growth

ROGER BOYES IN BONN

STEIN und Koppel d K), the West German ering and shipbuilding expects a return to profit growth this year, slight drop in profits in

1978 results, according to lmut Heusler, the execu- hairman, were less than ctory but far from poor. ofits dropped to DM 11.3m from DM 11.7m in 1977, a turnover increase of r cent to DM 1.13bn $592m). The Board is recommending payment of an 11 per cent dividend.

The drop in profits resulted partly from the continuing difficulties of the shipbuilding sector. Orders were disappointing and some 200 yard workers were laid off, with revenue running slightly below that of 1977. But orders for 1979 seemed to have picked up and would be sufficient to keep the yards fully employed well into the second half of the year.

Of more concern for a traditional exporter like O and K was the fall in overseas turnover. The proportion of exports in overall turnover amounted to 43 per cent, compared to 62 per cent in 1977. This dramatic fall took place, Dr. Heusler said, because of the poor investment climate in the West, the strength of the D-mark against the U.S. dollar (the company's economists had expected the dollar to strengthen in 1978), protectionism in some importing countries, and high domestic labour costs.

MPUTERS

argest Japanese makers ahead

RICHARD C. HANSON IN TOKYO

N'S two largest computer acturers chalked up size- les and profit gains in the nded March, while a third r maker reported a net

tsu, which holds about cent of the domestic com- market ranking behind apan, achieved a gain in ofit of 30.9 per cent to bn ($48.7m) as sales rose 8 per cent to Y440.9bn

rts rose by 35.8 per cent, to account for 14.6 per cent of sales. Sales of computers rose 10.4 per cent to Y302.9bn, or nearly 70 per cent of all sales.

Fujitsu forecasts sales this year of Y490bn, and net profits of Y12bn.

Nippon Electric Company (NEC) has reported a rise in net profit of 8.3 per cent to Y7.61bn on a sales increase of 14.3 per cent to Y615.44bn. Its exports were up by 6.4 per cent to Y177.7bn, while those to Government-related agencies, such as Nippon Telephone and Telegraph, rose 11 per cent to Y161.9bn and other domestic sales increased 22.2 per cent to Y275.8bn.

Oki Electric Industry, which has suffered from sharp drops in exports as the yen appreciated over the past two years, reported a net loss of Y1.38bn compared with a net profit of Y715m the year before. Sales were up by 7 per cent to Y136.68bn.

Posner stake in Reliance Electric

By David Lascelles in New York

MR. VICTOR POSNER, the businessman, may be on the verge of pulling off another coup.

His company, Sharon Steel, revealed at the end of last week, that it had bought 4.1 per cent of the common stock of Reliance Electric, the company for which Exxon announced a bid a few days earlier.

Sharon said that it bought these shares before the Exxon bid was announced for $21.4m, implying an average purchase price of $34 per share. Exxon's bid is at $72 per share.

The investment was being revealed, Sharon said, because of its "possible significance" to the investing public. Normally, an investor need not reveal an investment of less than 5 per cent of a company's stock.

Exxon announced last month that it was prepared to make a $1.1bn cash tender offer to secure control of Reliance, a Cleveland-based company.

Kaiser Steel to sell interest in Hamersley

OAKLAND — Kaiser Steel Corporation has agreed to sell its entire 28.3 per cent interest in Hamersley Holdings to Conzinc Riotinto of Australia for $307.5m.

Kaiser said that the sale was subject to approval by the directors of both companies, execution of a definitive agreement and approval by the Australian Government.

Under terms of the deal, according to Kaiser, Conzinc will pay $3.02 in cash for each of the 68.7m Hamersley common shares. Closing is expected within 60 days.

The proceeds will be used to reduce Kaiser debt and for other corporate purposes. Conzinc currently owns 54 per cent of Hamersley's stock.

Reuter

PENDING DIVIDENDS

For the convenience of readers the dates when some of the more important company dividend statements may be expected in the next few weeks are given in the following table. The dates shown are those of last year's announcements, except where the forthcoming Board meetings (indicated thus*) have been officially published.

	Date	Announcement last year
Alexanders Discount	July 3	Int. 4.5
*Allen (E.) Balfour	June 27	Final 3.13
*Allied Breweries	June 12	Int. 1.4
Arbuthnot Latham	June 22	Final 6.23
Armitage Shanks	June 8	Final 2.32
Assoc. Bnt. Foods	June 12	Final 1.523
Associated Cmunictns.	June 22	Final 4.2139
BAT Inds.	June 27	Sec. int. 5.0
*BPB Inds.	June 27	Final 3.824
Baker Perkins	June 22	Sec. int. 4.351
Bath and Portland	July 4	Int. 1.6
*Berisford (S. and W.)	June 21	Int. 1.925
Bnt. and Com. Shipping	June 15	Final 6.008
Brown Shipley	June 8	Final 5.284
*Burnett and Hallamshire	June 20	Sec. int. 1.427
Charter Consd.	June 6	Final 5.2764
*Chloride	June 14	Sec. int. 3.798
Chubb	June 28	Final 2.496
*Daily Mail and Gen. Tst.	June 12	Sec. int. 8.389
Dawson Internatnl.	June 19	Final 1.982
*De La Rue	June 5	Final 6.4
*Elliott (B.)	June 27	Final 2.868
*English China Clays	June 14	Int. 1.925
GEI Intl.	June 13	Final 3.0361
General Electric	July 6	Final 2.045
Granada	July 3	Final 1.189
Grand Metropltn.	June 8	Int. 1.75
Gt. Portland Estates	June 13	Final 3.357
*Guinness (A.)	June 15	Int. 2.618
*Guthrie	June 7	Final 15.0¶
Hambros	July 7	Final 58.467
*Hanson Tst.	June 18	Int. 3.025
Harrisons and Crosfield	June 7	Final 17.531
Hill Samuel	June 12	Final 3.229
Imp. Contntl. Gas	June 27	Sec. int. 5.808
Intl. Timber	June 15	Final 4.285
*Johnson Matthey	June 5	Final 5.9¶
LCP	June 27	Final 2.79
*Lindustries	June 21	Final 6.0
*Lon. & O'seas Freighters	June 15	Final nil
MK Electric	June 28	Final 2.39
*McCorquodale	June 6	Int. 5.75
*Metal Box	June 11	Final 10.721
News Intl.	June 23	Int. 4.45
Norcros	June 23	Final 3.185
*Northern Foods	June 5	Int. 1.5
*Pegler-Hattersley	June 6	Final 4.535
*Pilkington Bros.	June 15	Sec. int. 5.85
Plessey	June 20	Final 2.573
Powell Duffryn	June 20	Final 6.5
Racal Electronics	June 22	Final 2.18
*Rank Org.	July 16	Int. 4.0
Rediffusion	June 23	Final 3.916
*Redland	June 28	Final 2.126
Renold	June 29	Final 6.841
SGB	June 27	Int. 2.75
Scapa	June 23	Final 3.0
Sheepbridge Eng.	June 22	Final 2.25
*600 Group	June 7	Final 2.23
*Sketchley	June 5	Final 2.940
Tesco Stores	June 21	Final 0.9233
Thorn Elec.	July 7	Final 9.0
Trust Houses Forte	June 28	Int. 2.85
Tunnel	June 22	Final 7.622
UKO Intl.	June 8	Final 5.87
*Ward (T. W.)	June 6	Int. 1.65
Wedgwood	June 6	Final 3.98
Whitecroft	June 26	Final 9.0
Westland Aircraft	June 14	Final nil
Woodhead (Jonas)	June 18	Final 2.57

* Board meetings intimated. † Rights issue since made. ‡ Tax free. § Scrip issue since made from reserves. ¶ Forecast.

BASE LENDING RATES

A.B.N. Bank	12 %	■ Hill Samuel	§12 %
Allied Irish Banks Ltd.	12 %	C. Hoare & Co.	†12 %
Amro Bank	12 %	Julian S. Hodge	13 %
American Express Bk.	12 %	Hongkong & Shanghai	12 %
A P Bank Ltd.	12 %	Industrial Bk. of Scot.	12 %
Henry Ansbacher	12 %	Keyser Ullmann	13 %
Associates Cap. Corp.	13 %	Knowsley & Co. Ltd.	13½%
Banco de Bilbao	12 %	Lloyds Bank	12 %
Bank of Credit & Cmce.	12 %	London Mercantile	12 %
Bank of Cyprus	12 %	Edward Manson & Co.	13 %
Bank of N.S.W.	12 %	Midland Bank	12 %
Banque Belge Ltd.	12 %	■ Samuel Montagu	12 %
Banque du Rhone et de la Tamise S.A.	13½%	■ Morgan Grenfell	12 %
Barclays Bank	12 %	National Westminster	12 %
Bremar Holdings Ltd.	13 %	Norwich General Trust	12 %
Brit. Bank of Mid. East	12 %	P. S. Refson & Co.	12 %
■ Brown Shipley	12 %	Rossminster	12 %
Canada Perm't Trust	12 %	Ryl. Bk. Canada (Ldn.)	12 %
Cayzer Ltd.	12 %	Schlesinger Limited	12 %
Cedar Holdings	12 %	E. S. Schwab	13 %
■ Charterhouse Japhet	12 %	Security Trust Co. Ltd.	13 %
Choulartons	12 %	Shenley Trust	14 %
C. E. Coates	12 %	Standard Chartered	12 %
Consolidated Credits	12 %	Trade Dev. Bank	12 %
Co-operative Bank	*12 %	Trustee Savings Bank	12 %
Corinthian Secs.	12 %	Twentieth Century Bk.	13 %
Credit Lyonnais	13 %	United Bank of Kuwait	12 %
The Cyprus Popular Bk.	12 %	Whiteaway Laidlaw	12½%
Duncan Lawrie	12 %	Williams & Glyn's	12 %
Eagil Trust	12 %	Yorkshire Bank	12 %
English Transcont.	12 %		
First Nat. Fin. Corp.	14 %		
First Nat. Secs. Ltd.	14 %		
■ Antony Gibbs	12 %		
Greyhound Guaranty	12 %		
Grindlays Bank	‡12 %		
■ Guinness Mahon	12 %		
■ Hambros Bank	12 %		

■ Members of the Accepting Houses Committee.

* 7-day deposits 9½%, 1-month deposits 9¾%.

† 7-day deposits on sums of £10,000 and under 9½%, up to £25,000 10% and over £25,000 10½%.

‡ Call deposits over £1,000 9½%.

§ Demand deposits 9½%.

RECENT ISSUES

EQUITIES

Issue Price p	Amount Paid Up	Latest Renunc. Date	1979 High	1979 Low	Stock	Closing Price p	+ or −	Div. P. or Amount	Times Covered	Gross Yield	P.E. Ratio
60	F.P.	—	91	78½	B & Q (Retail) 5p	87	+3	2.46	2.8	2.8	18.7
§115	F.P.	—	207	137½	††Baker (John)	202	−5	12.0	—	8.0	—
§§	F.P.	—	57⅛	41½	Bank Bridge 10p	41½	....	—	—	—	—
‡‡	F.P.	22/6	53	51	Fulcrum Inv. Income	52	...	64.0	—	11.5	—
‡‡	F.P.	22/6	4½	3	Do. Capital 2½p	4¼	...	—	—	—	—

FIXED INTEREST STOCKS

Issue Price £	Amount Paid up	Latest Renunc. Date	1979 High	1979 Low	Stock	Closing Price £	+ or −
99¾	F.P.	—	99¾	99½	Cleveland (County of) Var. Rate 1984	99½	....
‡‡	—	—	53⅛	52¾	Eng. Assoc. Sterling Fd. Part. Red. Prf.	53⅛	....
20p	F.P.	11/5	21¼p	18½p	How'rd Wyndh'm 9% Cnv. Cum. Red. Prf.	18½p	....
100	£10	—	12	11¾	Portsmouth Water 8% Red. Prf. 1984	11¾	....
100	F.P.	11/5	116½	108	Slough Ests. 8% Cnv. 1991-94	111	....
98	£25	23/6	25¼	24¾	York Water 12% Deb 1986	24¾	

"RIGHTS" OFFERS

Issue Price p	Am'unt Paid up	Latest Renunc. Date ●	Latest Renunc. Date ■	1979 High	1979 Low	Stock	Closing prices p	+ or −
185	F.P.	3/5	6/6	257	222	Beatson Clark	242	......
80	F.P.	18/5	8/6	254	232	Brent Chemicals	256	......
30	F.P.	27/4	1/6	113	92	Crest Nicholson	99	....
26½	F.P.	14/5	8/6	35½	30½	Davis & Metcalfe 'A'	32	....
25	Nil	8/6	6/7	25pm	15pm	Edwards (Louis C.)	25pm	....
12	F.P.	1/6	29/6	15½	14	Hampton Trust	14½	....
34	F.P.	24/4	12/6	59	48	Norfolk Cap. Hotels	50	....
85	Nil	—	—	36pm	16½pm	P.M.A. Holdings	36pm	+2
44	F.P.	19/4	31/5	74	62	Park Place Invs.	62	.....
20	Nil	—	—	14pm	9pm	Provincial Laundries	14pm	+½
115	F.P.	1/6	29/6	126	120	Pullman (R. & J.)	118	....
115	Nil	11/6	2/7	21pm	16pm	Scot. Met. Prop	16pm	....
265	Nil	—	—	30pm	25pm	Simon Engineering	30pm	−1
20	F.P.	27/4	15/6	32	27½	Singlo Holdings	28½	
150	Nil	—	—	6pm	2pm	Smurfit (Jefferson)	4pm	−1½
455	F.P.	4/5	6/7	507	487	Standard Chartered Bank	490	+1
138	Nil	—	—	7pm	4pm	Tilling (Thomas)	5pm	..
175	F.P.	23/5	4/7	249	210	Tricentrol	230	−10
95	Nil	7/6	13/7	12½pm	7pm	UDS	10pm	+2½
20	Nil	—	—	5½pm	3pm	Wecks Associates	5½pm	+¼

Renunciation date usually last day for dealing free of stamp duty. b Figures based on prospectus estimate. g Assumed dividend and yield. u Forecast dividend; cover based on previous year's earnings. F Dividend and yield based on prospectus or other official estimates for 1979. Q Gross. T Figures assumed. ‡ Cover allows for conversion of shares not now ranking for dividend or ranking only for restricted dividends. § Placing price to public. pt Pence unless otherwise indicated. ¶ Issued by tender. ‖ Offered to holders of ordinary shares as a "rights." ** Issued by way of capitalisation. §§ Reintroduced. ¶¶ Issued in connection with reorganisation, merger or takeover. ‖‖ Introduction. □ Issued to former preference holders. ■ Allotment letters (or fully-paid). ● Provisional or partly-paid allotment letters. ★ With warrants. †† Unlisted security. ‡‡ Issued as units comprising 2 Income shares and 10 Capital shares at 125p per u.

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† Property Growth	11½%
† Vanbrugh Guaranteed	11 %

† Address shown under Insurance and Property Bond Table.

ALLEN HARVEY & ROSS INVESTMENT MANAGEMENT LTD.
45 Cornhill, London EC3V 3PB - Tel: 01-623 6314
Index Guide as at May 31, 1979

Capital Fixed Interest Portfolio	114.80
Income Fixed Interest Portfolio	105.00

CORAL INDEX: Close 511-516

CURRENCIES, MONEY and GOLD

urope under fire

COLIN MILLHAM

nterest rate war began to in Europe last week as e central bank and then raised its interest rates. rly skirmishes began at d of March, shortly after rt of the European Mone- ystem, when the German bank increased its dis- rate to 4 per cent from 3 nt.

ough this appeared to no early strains on the he upward trend of Ger- nterest rates has steadily ed the pressure on the weaker members.

Currencies such as the Belgian franc have been on a treadmill, moving faster and faster, with no sign of a let up.

The reason that some currencies have been running as fast as they can, just in order to stand still, is the sharp rise in oil prices which has not been accompanied by a corresponding weakness of the dollar.

As an official of the Belgian National Bank put it: "Who knows why the dollar is gaining now on reports of higher oil prices, and why it fell a few months ago on the same reports?"

Interest rates have risen sharply in Germany over the last two months, with three-month money rising to 6.25 per cent last Friday, from 4.70 per cent at the end of March.

The increase in the Bundesbank lombard rate by ½ per cent to 5½ per cent last Thursday, must have been viewed with some regret in several other financial centres. On Wednesday the Belgian National Bank raised its discount rate for the second time in a month, to 8 per cent from 7 per cent, and on the same day the Netherlands Bank lifted its discount rate by ½ per cent to 7 per cent.

French interest rates rose steadily throughout the week, with the French franc already supported by very high Euro-franc interest rates.

On Friday the Danish krone replaced the Belgian franc as the weakest member of the EMS. It would not be surprising if the Danish central bank was the next to increase its discount rate. Only a few weeks ago the krone was the second strongest currency, but it has fallen very sharply recently.

IRRENCY RATES

31	Bank rate %	Special Drawing Rights	European Currency Unit
....	12	0.610556	0.634816
......	9½	1.26727	1.31629
n $...	11¼	1.47814	1.51545
Sch...	5¼	17.8780	18.5795
F.....	6	39.0008	40.5319
......	8	7.00547	7.27646
......	4	2.42695	2.52162
......	7	2.66053	2.76519
Fr....	9½	5.61337	5.83380
......	10½	1085.62	1126.42
......	4¼	280.954	291.295
K.....	7	6.58230	6.82956
Pes..	6	85.6791	86.9937
Kr ..	6½	5.57155	5.77523
......	1	2.19555	2.28113

GOLD

	June 1	May 31
Gold Bullion (fine ounce)		
Close	$275¼-276 (£132.8-133.2)	$275¼-276 (£133-133.5)
Opening	$276¾-277½ (£133.6-133.9)	$277-277¾ (£134-134.3)
Morning fixing	$276.70 (£133.382)	$277.15 (£134.129)
Afternoon fixing	$275.10 (£132.674)	$274.60 (£132.569)
Gold Coins, domestically		
Krugerrand	$292¾-296½ (£141½-143¼)	$293-297 (£141¼-143½)
New Sovereigns	$73¾-77¼ (£35¾-37¼)	$74-76 (£35¾-36¾)
Old Sovereigns	$86-88 (£41½-42½)	$86-88 (£41½-42½)
Gold Coins, internationally		
Krugerrand	$285-287 (£137½-138½)	$283-286 (£136½-137¾)
New Sovereigns	$71-73 (£34¼-35¼)	$71-73 (£34¼-35¼)
Old Sovereigns	$92-94 (£44½-45½)	$92-94 (£44½-45½)
$20 Eagles	$439-444	$440-445
$10 Eagles	$239-244	$229-234
$5 Eagles	$169-174	$159-164

OTHER MARKETS

June 1	£	$		£ Note Rates
Argentina Peso	2612-2632	1259-1269	Austria	28¾-29½
Australia Dollar	1.8725-1.8765	0.9025-0.9045	Belgium	65.30-66.30
Brazil Cruzeiro	50.76-51.76	24.45-24.95	Denmark	11.30-11.40
Finland Markka	8.29-8.30	4.0055-4.0075	France	9.05-9.20
Greek Drachma	76.369-78.216	36.80-37.70	Germany	3.90-3.99
Hong Kong Dollar	10.5350-10.5500	5.0915-5.0935	Italy	1,735-1,775
Iran Rial	149-155	72-75	Japan	450-460
Kuwait Dinar (KD)	0.573-0.583	0.2793-0.2794	Netherlands	4.27-4.37
Luxembourg Frc.	63.85-63.95	30.78-30.80	Norway	10.70-10.80
Malaysia Dollar	4.59½-4.60½	2.2230-2.2240	Portugal	99-105
New Zealand Dlr.	1.9825-1.9865	0.9555-0.9585	Spain	135-138
Saudi Arab. Riyal	6.98-7.08	3.3995-3.4020	Switzerland	3.50-3.60
Singapore Dollar	4.56-4.57	2.2050-2.2060	United States	2.07-2.09
Sth. African Rand	1.7435-1.7535	0.8405-0.8455	Yugoslavia	41-43

Rate given for Argentina is free rate.

THE DOLLAR SPOT AND FORWARD

Day's spread	Close	One month	% p.a.	Three months	% p.a.
2.0700-2.0780	2.0740-2.0750	0.28-0.18c pm	1.33	0.70-0.60 pm	1.25
1.9670-1.9720	1.9675-1.9700	0.60-0.45c pm	3.20	1.95-1.80 pm	3.81
85.70-86.20	85.75-85.80	0.06-0.04c pm	0.70	0.14-0.11 pm	0.58
2.0990-2.1030	2.1005-2.1025	0.48-0.38c pm	2.45	0.85-0.75 pm	1.52
30.75-31.00	30.78-30.80	6.2-5.2c pm	2.22	10-8 pm	1.17
5.5180-5.5340	5.5310-5.5330	0.25-0.75ore dis	−1.08	1.50-2.00dis	−1.26
1.9150-1.9200	1.9170-1.9180	0.88-0.78pf pm	5.19	2.17-2.07 pm	4.42
49.75-49.95	49.85-49.95	37-53c dis	−10.82	90-140 dis	−9.22
66.00-66.20	66.08-66.13	30-20c pm	4.54	10 pm-par	0.30
854.90-856.50	854.95-855.25	1.25-2.00 lire dis	−2.28	4.75-5.75dis	−2.45
5.1900-5.1965	5.1905-5.1920	0.75-0.35ore pm	1.27	2.30-1.90 pm	1.62
4.4300-4.4350	4.4300-4.4325	0.15-0.35c dis	−0.57	1.05-1.25dis	−1.04
4.3880-4.3970	4.3885-4.3900	0.65-0.45ore pm	1.50	1.75-1.35 pm	1.41
221.00-221.50	221.20-221.40	1.00-0.90y pm	5.15	2.85-2.75 pm	5.06
14.1150-14.13	14.12-14.12½	5.80-5.30gro pm	4.71	14.50-13 pm	3.89
1.7315-1.7350	1.7325-1.7335	1.30-1.25c pm	8.83	3.70-3.65 pm	8.48

reland and Canada are quoted in U.S. currency. Forward premiums counts apply to the U.S. dollar and not to the individual currency.

THE POUND SPOT AND FORWARD

June 1	Day's spread	Close	One month	% p.a.	Three months	% p.a.
U.S.	2.0700-2.0780	2.0740-2.0750	0.28-0.18c pm	1.33	0.70-0.60 pm	1.25
Canada	2.4030-2.4220	2.4185-2.4195	0.15-0.05c pm	0.50	0.40-0.30 pm	0.58
Nethlnd.	4.33-4.37	4.35½-4.36½	1¾-¾c pm	3.44	3¼-2¼ pm	2.84
Belgium	63.60-64.00	63.85-63.95	20-10c pm	2.82	40-30 pm	2.19
Denmark	11.42-11.48	11.47-11.48	2ore pm-par	1.05	3¼-1¼ pm	0.78
Ireland	1.0490-1.0530	1.0515-1.0525	10-20p dis	−1.71	62-72 dis	−2.93
W. Ger.	3.95½-3.98½	3.97¼-3.98¼	2½-1½pf pm	6.03	6¼-5¼ pm	5.66
Portugal	102.70-103.60	103.25-103.55	50-110c dis	−9.28	150-250 dis	−7.74
Spain	136.85-137.30	137.10-137.20	80-30c pm	4.81	80-30 pm	1.80
Italy	1,771-1,777	1,773-1,774	1¼-3¼ lire dis	−1.62	3½-5½ dis	−1.01
Norway	10.74½-10.78½	10.76-10.77	2½-1½ore pm	1.67	7¾-5¾ pm	2.51
France	9.16½-9.20½	9.19¼-9.20¼	¼c pm-¼c dis	−0.33	¼ pm-¼ dis	−0.11
Sweden	9.09-9.12½	9.09¾-9.10¾	1¾ore pm-¼ore dis	0.99	4½-2½ pm	1.54
Japan	455-462	458½-459½	2.70-2.45y pm	6.73	7.35-7.10 pm	6.30
Austria	29.15-29.35	29.28-29.33	10gro pm-par	2.05	40-30 pm	4.78
Switz.	3.57½-3.61	3.59¾-3.60¾	3½-2½c pm	8.76	8⅞-7⅞ pm	9.31

Belgium rate is for convertible francs. Financial franc 65.85-65.95. Six-month forward dollar 1.12-1.02c pm; 12-month 2.12-2.02c pm.

HANGE CROSS RATES

June 1	Pound Sterling	U.S. Dollar	Deutschem'k	Japan'se Yen	French Franc	Swiss Franc	Dutch Guild'r	Italian Lira	Canada Dollar	Belgian Franc
Sterling	1.	2.075	3.978	459.0	9.198	3.598	4.360	1774.	2.419	63.90
lar	0.482	1.	1.917	221.3	4.434	1.734	2.101	854.9	1.166	30.80
emark	0.251	0.522	1.	115.4	2.312	0.904	1.096	445.9	0.608	16.07
e Yen 1,000	2.179	4.520	8.666	1000.	20.04	7.838	9.499	3864.	5.270	139.2
Franc 10	1.087	2.256	4.325	499.0	10.	3.911	4.740	1928	2.630	69.48
ranc	0.278	0.577	1.106	127.6	2.557	1.	1.212	493.0	0.672	17.76
uilder	0.229	0.476	0.912	105.5	2.110	0.825	1.	406.8	0.555	14.66
ira 1,000	0.564	1.170	2.243	258.8	5.186	2.028	2.458	1000.	1.364	36.03
n Dollar	0.413	0.858	1.644	189.7	3.802	1.487	1.802	733.2	1.	26.42
Franc 100	1.565	3.246	6.225	718.3	14.39	5.630	6.823	2775.	3.786	100.

DON MONEY RATES

e 1 79	Sterling Certificate of deposit	Interbank	Local Authority deposits	Local Auth. negotiable bonds	Finance House Deposits	Company Deposits	Discount market deposit	Treasury Bills ‡	Eligible Bank Bills ‡	Fine Trade Bills ‡
ht.......	—	8-12	—	—	—	11⅛	9-11⅛	—	—	—
notice..	—	—	11⅝-11¾	—	—	—	—	—	—	—
or.......	—	—	—	—	—	—	—	—	—	—
notice..	—	11⅛-11⅝	11⅝-11⅞	—	12	11¾	11¼-11½	—	—	—
nth	11½-11⅜	11⅝-11¾	11¾-11⅞	12⅜-12⅛	12⅛	12⅛	11⅝	11¼-11⅜	11⅞-11¾	12⅜
nths	11½-11⅜	11½-11¾	—	12⅛-11¾	12⅛	—	11⅝	11⅜-11⅜	11⅞-11¾	12⅛
nonths..	11½-11⅜	11½-11¾	11¾-11⅞	11⅞	12⅛	12⅛	11⅝	11½	11⅝-11⅝	11⅞
ths	11½-11⅝	11⅝-11¾	11½-11¾	11½-11⅜	12	—	—	—	11½	11⅞
onths...	11⅝-11⅝	11⅝-11⅝	—	11⅝-11⅜	12	—	—	—	—	—
r........	11⅜-11¼	11⅜-11½	11½-11⅝	11⅜-11⅜	11⅞	—	—	—	—	—
ars.....	—	—	11⅞-12	—	—	—	—	—	—	—

l authority and finance houses seven days' notice others seven days' fixed. *Long-term local authority mortgage minally three years 12-12⅛ per cent; four years 12⅛-12¼ per cent; five years 12⅜-12½ per cent. ⊕Bank bill rates in o buying rates for prime paper. Buying rate for four-month bank bills 11⅝-11¹³⁄₃₂ per cent; four-month trade bills cent.

roximate selling rate for one-month Treasury bills 11⅝ per cent; two-month 11¼-11⅛ per cent; three-month per cent. Approximate selling rate for one month bank bills 11¾ per cent; two-month 11¹³⁄₁₆ per cent; and nth 11⅝ per cent; one-month trade bills 12⅜ per cent; two-month 12 per cent; and three-month 11⅞ per cent.

nce Houses Base Rates (published by the Finance Houses Association) 12 per cent from June 1, 1979. Clearing posit Rates for small sums at seven days' notice 9-9½ per cent. Clearing Bank Rates for lending 12 per cent. Bills: Average tender rates of discount 11.4528 per cent.

MONEY RATES

NEW YORK

Prime Rate	11.75
Fed Funds	10.1875
Treasury Bills (13-week)	9.58
Treasury Bills (26-week)	9.41

GERMANY

Discount Rate	4
Overnight Rate	5.60
One month	5.90
Three months	6.50
Six months	6.90

FRANCE

Discount Rate	9.5
Overnight Rate	7.875
One month	8.3125
Three months	8.6875
Six months	9.0625

JAPAN

Discount Rate	4.25
Call (Unconditional)	5.25
Bills Discount (three-month)	5.625

WHO WOULD YOU LIKE TO INHERIT YOUR BUSINESS; YOUR FAMILY OR THE GOVERNMENT?

It may take you a lifetime to build up a business you're proud of.

A lifetime devoted to trying to make a better product, or give a finer service. Year after year of fighting off competition, working to win that vital contract, that extra sale.

And in Britain, it isn't easy. The way our economy is organised and regulated doesn't do much to encourage the entrepreneur. Whilst running your business, you're expected to act as a part-time tax collector. If you make a profit you have to pay tax on it. And if you want a high personal income, you face the highest direct taxes in Western Europe.

But, supposing you succeed and build up the business you've always dreamed of. Who will reap the benefit?

If you're not careful, so much Capital Transfer Tax will have to be paid that your business may need to be broken up and sold off.

But if you want to be careful, Equity & Law can help you. We know how to protect what you have created, and can help you pass on as much as possible to the people you want to have it.

After 135 years successful money management, you'll find us very understanding about your problems.

Why not talk to your financial adviser, or contact your nearest Equity & Law Office. Then we can make sure that what's yours goes where you want it to.

"Now look what you've done, did you have to mention Capital Transfer Tax on Fathers birthday?"

Equity & Law

Equity & Law Life Assurance Society Limited, 20 Lincoln's Inn Fields, London WC2A 3ES.

APPOINTMENTS

British Shipbuilders Board changes

Sir Keith Joseph, Secretary of State for Industry, has appointed **Mr. John Wright** and **Mr. John Steele** as part-time members of the Board of BRITISH SHIPBUILDERS for one year. Both hold senior positions with British Shipbuilders' subsidiaries and their appointment is in accordance with a continuation of a policy of bringing on to the Board in rotation senior executives from the subsidiary companies with long experience of the industry. In accordance with this policy **Mr. Ross Belch** will be retiring from the Board, as will **Mr. Tom McIver**.

Mr. Bill Richardson and **Mr. Cameron Parker** will be continuing as Board members for a further period of one year and six months respectively.

Mr. John Wright is currently non-executive chairman of Hall Russell, a subsidiary company of British Shipbuilders. He began his career in shipbuilding with the Burntisland Shipbuilding Company in 1928, and after an interval of seven years in India he returned to Burntisland where he became a director and general manager in 1953. Mr. Wright was appointed managing director of Hall Russell in 1955, and was chairman and managing director from 1968 until last year.

Mr. Wright was President of the Shipbuilders and Repairers National Association (SRNA) from 1976 to 1977, and is currently chairman of the linking committee of EEC shipbuilders, and of the British Ship Research Association.

Mr. John Steele is currently chairman and chief executive of Swan Hunter Shipbuilders, a subsidiary of British Shipbuilders. He began his career as an apprentice draughtsman at Swan Hunter in 1951. After progressing through production, contracting and estimating departments, he was appointed deputy chairman and chief executive in 1974 and to his present position last year.

*

Mr. Peter F. Worlidge has been appointed managing director and **Mr. Roy M. Treble** a director of a new subsidiary of Thos. R. Miller and Son (Holdings) to be called THOS. R. MILLER (ENERGY INSURANCE SERVICES). Other directors are **Mr. P. N. Miller**, **Mr. R. B. Tiley** and **Mr. P. M. Stone**.

*

Mr. P. C. F. Morgan has been appointed manager of the Canberra office of BRITISH AEROSPACE AUSTRALIA.

*

Dr. Bob Harris, director of the former Microbiological Research Establishment at Porton Down, is to advise the HEALTH AND SAFETY EXECUTIVE on microbiological hazards at work. His work will include developing the Executive's capacity to analyse microbiological contamination and recommend precautions, representing HSE on committees or public bodies and giving assistance to HSE staff in their training in this rapidly developing field.

*

Mr. Jeremy Thompson, editorial administration executive of Mirror Group Newspapers, has been appointed chief executive of WEST OF ENGLAND NEWSPAPERS, MGN's West Country subsidiary. Mr. Thompson, 32, began his career as a trainee journalist with United Newspapers on The Star, Sheffield, in 1966. He was appointed assistant editor of The Star in 1974 before moving to the Mirror Group in 1975.

*

Mr. John Thompson has been appointed a director and general manager of JOHN BLACKWOOD HODGE.

Mr. J. L. Blackwood, hitherto finance partner of T. C. COOMBS, BORLAND AND CO., has asked us to point out that he will not be remaining as an associate member of that company, following the restructuring announced in Saturday's issue, but will be joining LAURENCE, PRUST and CO. in July.

*

Mr. Ron Chamberlain has joined domestic electrical appliance maker PROCTOR-SILEX UK as director of marketing. Previously sales director of Sunbeam Electric, Mr. Chamberlain has been involved in the industry for nearly 30 years.

*

WESTBRICK ENGINEERING, Pinhoe, Exeter, has appointed **Mr. Robin Lavery** as marketing director. He joined the company in March 1977 as commercial manager.

*

A librarian to specialise in developing library services for ethnic minorities in Kent has been appointed by the COUNTY LIBRARY SERVICE. She is **Mrs. Jane Ghosh**, a graduate and chartered librarian who has travelled in Europe and Asia and worked as a teacher in India.

*

Mr. George Maine is to chair the MODULE CONSTRUCTORS ASSOCIATION, which represents all major UK module builders, for the third year in succession. Mr. Maine is business developments manager at William Press Production Systems. The MCA was formed in 1975 to further the aims and objectives of UK based companies engaged in the construction of module for the oil and gas industry. A major concern of the association is to ensure that its member companies combat worldwide competition and win a fair proportion of work in the UK and North Sea section. Mr. Maine will also represent the MCA on the Offshore Industry Liaison Committee, chaired by the Minister of Energy.

*

CONVEYOR UNITS, Stourport-on-Severn, has appointed **Mr. Arthur L. Chown** as field sales co-ordinator for Southern England. He will handle sales liaison and product installation co-ordination for Unitrac gravity conveyors and Xenorol powered roller conveyors and auxiliary equipment.

*

Mr. David Unwin has been appointed to the managing directorship of GRANDMET INTERNATIONAL SITE SERVICES, which provides life support services for construction workforces in the UK, Europe, Africa and Far East. **Mr. John Owen** has joined the Board as operations director.

*

Mr. David O'Brien has been appointed managing director of CRAY RESEARCH UK from July 1. He will be responsible for Cray's marketing and support operations in the UK and for exploring European opportunities outside Germany and France. Mr. O'Brien comes to Cray from IBM Europe where he was business manager for the European public sector. He succeeds **Mr. Peter Appleton Jones** who has been elected vice-president—marketing at Cray Research Inc., Minneapolis.

*

Mr. John H. Ruth is joining MASSEY-FERGUSON as general manager of world export operations for Asia, Africa and Australasia. For the past 15 years Mr. Ruth has held senior appointments with Deere and Company, most recently as director of sales branches, Europe, Africa and Middle East.

*

Mr. Paul Lever has been appointed managing director of TI TOWER HOUSEWARES, Wolverhampton cookware manufacturer. He was previously managing director of another Tube Investments' company.

*

Mr. Anthony Le Tissier has been appointed as the manager of THE FIRST NATIONAL BANK OF BOSTON (GUERNSEY), a subsidiary of The First National Bank of Boston. Mr. Le Tissier has been with the Guernsey operation since 1974 and previously was with Lloyds Bank. **Mr. James H. K. Lennane**, who is retiring from his position as general manager, will continue as a director and consultant.

*

Dr. Simon Willder has been appointed managing director of PLESSEY CONTROLS, Poole, Dorset, one of Britain's major suppliers of traffic control and communications equipment. He succeeds **Mr. Eric Clark** who has been appointed chief executive of PLESSEY TELECOMMUNICATIONS at its Edge Lane, Liverpool, headquarters.

Dr. Willder, who joined Plessey Radar in 1971, is widely experienced in electronics system management. He has been responsible for the system and software design and implementation of all the major real-time computer systems produced by Plessey Radar in the fields of air defence, air traffic control, army, navy, and electronic warfare.

*

Ms. Pamela Robertson, a senior consultant at the market development consultancy, KRAUSHAR ANDREWS AND EASSIE, has been appointed to the Board. She has been closely involved with the consultancy for over 10 years, and is also a director of Mintel, the marketing journal. Formerly she was development and operations manager of Brooke Bond Oxo Provisions and also held posts at Haddons, Unilever and Service Advertising.

*

Mr. Doug Fawcett has joined FRANCIS DENNEY (cosmetic, beauty and fragrance house) as managing director for the UK and Ireland. He moved to Denney from Orlane, where he held the position of sales director for the UK and Northern Ireland.

*

Mr. Brian England has been appointed senior international executive for the UK region of NATIONAL WESTMINSTER BANK'S international banking division. Since 1976 he has been deputy chief manager of the bank's London overseas branch.

TEL AVIV

Company	Prices June 3 1979	Change on the week
Banking, Insurance and Finance		
Bank Leumi le Israel	340	− 21.0
IDB Bankholding	443	− 2.0
Bank Hapoalim Br.	458	+ 4.0
Union Bk. of Israel Br.	330	+ 5.0
United Mizrahi Bank	243	− 5.0
Hassneh Insurance Br.	371	+ 25.0
General Mort. Bank Br.	288	− 7.0
"Tefahot" Israel M. B.	314.5	− 0.5
Land Development		
Africa Israel Inv. I£10	951	+ 10.0
Israel Land Devpt. Br.	205	− 10.0
Property and Building	394	− 5.0
Public Utility		
Israel Electric Corp.	260	+ 1.0
Investment Companies		
Bank Leumi Invest.	299	—
"Clal" Israel Invest.	551	− 25.0
Discount Invest.	305	− 11.0
Commercial and Industrial		
Alliance Tire & Rubber	1,305	− 45.0
Elco Br.	285	+ 8.0
Argaman Textile Br.	380	− 9.0
"Ata" Textile "B"	183	− 3.0
Amer. Israeli Ppr. Mills	926	− 86.0
Assis	405	− 14.0
Elite	366	− 4.0
Teva Reg.	504	− 37.0
Fuel and Oil		
Delek	259	− 7.0

Source: Bank Leumi le Israel BM, Tel Aviv.

WORLD STOCK MARKETS

Indices

NEW YORK —DOW JONES

	June 1	May 31	May 30	May 29	May 25	May 24	1979 High	1979 Low	Since Compil't'n High	Since Compil't'n Low
● Industr'ls	821.27	822.33	822.15	832.55	836.28	837.66	878.72 (10/4)	807.00 (27/2)	1051.70 (11/1/73)	41.22 (2/7/32)
H'me B'nds	84.39	84.45	84.47	84.59	84.71	85.94	85.90 (2/2)	82.92 (8/5)	—	—
Transport.	235.10	233.75	232.62	234.27	234.71	233.44	235.25 (10/4)	205.78 (27/2)	279.88 (7/2/69)	12.23 (8/7/32)
Utilities	101.35	101.69	101.79	101.59	101.45	100.65	104.94 (6/4)	98.51 (15/5)	163.32 (20/4/69)	10.58 (22/4/42)
Trading vol 000's	24,590	50,320	29,420	27,160	25,740	25,740	—	—	—	—

● Day's high 826.14 low 817.74

Ind. div. yield %	May 25	May 18	May 11	Year ago (approx)
	6.01	5.96	6.02	5.59

STANDARD AND POORS

	June 1	May 31	May 30	May 29	May 25	May 24	1979 High	1979 Low	SinceC'mpil't'n High	SinceC'mpil't'n Low
‡Indust'ls	110.25	110.79	110.23	111.35	111.57	111.27	116.89 (9/1)	107.08 (27/2)	134.64 (11/1/73)	3.65 (30/6/32)
§Composite	99.17	99.09	99.11	100.05	100.22	99.95	103.34 (10/4)	96.13 (27/2)	125.85 (11/1/73)	4.40 (1/6/32)

	May 30	May 23	May 16	Year ago (approx)
Ind. div. yield %	5.38	5.32	5.38	5.01
Ind. P E Ratio	8.38	8.45	7.98	9.29
Lon Gov. Bond Yield	8.98	9.05	9.18	8.51

N.Y.S.E. ALL COMMON

June 1	May 31	May 30	May 29	1979 High	1979 Low
56.04	55.99	56.01	56.53	58.18 (10/4)	53.88 (27/2)

Rises and Falls

	June 1	May 31	May 30
Issues Traded	1,881	1,889	1,880
Rises	741	716	358
Falls	647	761	1,134
Unchanged	493	412	388
New Highs	—	17	26
New Lows	—	34	50

		June 1	May 31	May 30	May 29	1979 High	1979 Low
MONTREAL	Industrial	258.80	256.03	255.34	255.60	258.80 (1/6)	219.19 (2/1)
	Combined	258.79	257.58	257.19	257.45	258.79 (1/6)	225.88 (2/1)
TORONTO	Composite	1527.6	1519.7	1515.6	1518.5	1527.6 (1/6)	1315.8 (2/1)
JOHANNESBURG	Gold	292.0	(c)	290.8	295.4	295.4 (29/5)	228.4 (17/4)
	Industrial	319.5	(c)	319.6	320.1	320.1 (25/5)	270.6 (2/1)

	June 1	Previous	1979 High	1979 Low
Australia (¶)	591.68	592.40	597.68 (19/3)	545.72 (2/1)
Belgium (§)	106.79	106.53	109.09 (3/5)	95.80 (3/1)
Denmark (**)	95.20	95.15	97.22 (10/5)	88.52 (8/1)
France (††)	76.4	77.3	81.6 (2/5)	71.5 (15/2)
Germany (‡‡)	738.30	747.1	834.6 (16/1)	747.1 (31/5)
Holland (§§)	72.5	72.6	85.9 (24/1)	72.5 (1/6)
Hong Kong (¶¶)	557.30	562.96	568.90 (3/5)	495.25 (2/1)
Italy (‖)	79.47	79.17	79.48 (22/5)	65.56 (2/1)
Japan (a)	445.51	449.40	462.97 (31/1)	435.22 (10/4)
Singapore (b)	400.22	400.22	404.15 (28/2)	345.34 (23/2)
Spain (d)	97.81	98.06	111.58 (5/5)	[illegible]
Sweden (c)	358.11	360.21	401.34 (6/2)	[illegible]
Switzerld (f)	313.6	313.8	320.1	[illegible]

Indices and base dates (all base values 100 except NYSE All Common—50; Standards and Poors—10; and Toronto 300—1,000; the last named based on 1975). † Excluding bonds. ‡ 400 Industrials. § 400 Industrials, 40 Utilities, 40 Finance and 20 Transport. ¶ Sydney All Ordinary. ‖ Belgian SE 31/12/63. ** Copenhagen SE 1/1/73. †† Paris Bourse 1961. ‡‡ Commerzbank Dec. 1953. §§ Amsterdam Industrial 1970. ¶¶ Hang Seng Bank 31/7/64. ‖‖ Banca Commerciale Italiana 1972. a Tokyo New SE 4/1/68. b Straits Times 1966. c Closed. d Madrid SE 29/12/78. e Stockholm Industrial 1/1/58. f Swiss Bank Corporation. u Unavailable.

FRIDAY'S ACTIVE STOCKS

	Stocks traded	Closing price	Change on day
W. E. Heller	409,300	25	+ [illegible]
NLT	408,300	33	+ [illegible]
Simplicity	346,600	12⅜	[illegible]
Dillingham	344,800	13½	[illegible]
Brunswick	328,000	13⅞	[illegible]
IBM	227,300	76⅞	[illegible]
Texas Intl.	206,500	14	[illegible]
McDonnell Doug.	206,200	24⅛	[illegible]
Chicago Bridge	200,400	47⅞	[illegible]
Gen Public Util	188,400	8⅞	+ [illegible]

EUROPE

AMSTERDAM

June 1	Price Fls.	+ or −	Div. %	Yld. %
Ahold (Fl.20)	91.3	−0.7	22	4.8
Akzo (Fl.20)	28.2	−0.1	—	—
Alg'm Bk (Fl 100)	345.5	+1.0	A25	7.1
Amev (Fl.10)	87.7xd	+0.3	50	5.7
Amrob'k (Fl.20)	69.3	+0.1	25	7.0
Bijenkorf	73	−1	25	7.6
BokaW'stm(Fl10	99xd	...	85	8.6
Buhrm' Tetter'	59.1xd	−0.2	26	8.6
Elsev'r-NDU(Fl20	252	−3.2	40	3.3
Ennia N.V. B'rer	148.2	−0.5	A37½	5.0
EurComTst(Fl10	70.5	...	94.5	4.9
Gist-Broc (Fl0.	35.7	−0.2	22	6.0
Heineken (Fl25)	82.5	−2.2	14	4.2
Hoog'ns (Fl.20)	31	+0.2	—	—
HunterD.(Fl.100	21.3	...	1.2	5.6
K.L.M.(Fl.100)	103	+0.5	3	2.9
Int. Muller(Fl.20	35.2xd	−1.4	19	11.2
Nat.Ned InsFl10	103.5xd	...	55	4.9
NedCr'dBkFl.20	67xd	−0.5	22.5	7.5
NedMidBk(Fl.50)	209	−0.2	24	5.7
Oce (Fl.20)	157	+0.5	38	4.8
OGEM (Fl.10)	20.6xd	...	24	11.2
Van Ommeren	175	−2	—	—
Pakhoed (Fl.20)	46.5	−0.6	—	—
Philips (Fl.10)	23.8	...	18	7.1
RijnSchVer(Fl100	28.9	−0.2	—	—
Robeco (Fl.50)	162xd	−1.5	26.4	8.3
Rolinco (Fl.50)	130.8	...	[illegible]	—
Rorento (Fl.50)	111.3xd	−0.1	19.1	3.7
RoyalDutchFl20	140.8xd	−0.3	55.75	7.6
Slavenburg	238.8	...	21.5	9.0
TokyoPac Hld$	130.5	−1.0	$0.30	0.5
Unilever (Fl.20)	122.9	−0.6	44.8	7.2
Viking Res.	82.6	−0.2	$0.20	0.9
Volker StvnFl20	69xd	−3.5	30	4.3
West.Utr.Hypok	358	−2	33	9.2

VIENNA

June 1	Price %	+ or −	Div. %	Yld. %
Creditanstalt	336	...	10	2.9
Perlmooser	277	...	9	3.2
Selecta	569	−2	38	6.6
Semperit	80	...	—	—
Steyr Daimler	217xr	−1	9	4.2
Veit Magnesit	266	+2	10	3.8

BRUSSELS/LUXEMBOURG

June 1	Price Frs.	+ or −	Div. Frs. Net	Yld. %
Arbed	2,495	−65	—	—
Bekaert "B"	2,630	−10	180	4.9
C.B.R. Cement	1,258	+2	100	7.9
Cockerill	550	+8	—	—
EBES	3,160	−20	177	8.2
Electrobel	6,850	+70	455	6.6
Fabrique Nat.	3,665	−15	250	6.8
G.B. Inno Bm.	2,650	−40	170	6.4
Gevaert	1,270	−4	85	6.7
GBL (Brux L)	1,750	−5	90	5.1
Hoboken	3,100	+5	170	5.5
Intercom.	1,780	+5	142	8.0
Kredietbank	7,250	...	330	4.0
La Royale Belge	6,350	−150	325	5.1
Pan Holdings	2,830	...	52.55	2.7
Petrofina	4,710	+90	190	4.0
Soc Gen Banque	3,230	−10	280	6.7
Soc. Gen. Belge	2,090	−10	140	6.7
Sofina	3,460	...	225	6.7
Solvay	2,615	...	A2.10	8.0
Traction Elect.	2,905	+5	170	5.9
UCB	1,394	−6	—	—
Un Min. (1.10)	870	−18	40	4.6
Vielle M'ntagne	1,755	+20	—	—

COPENHAGEN ♦

June 1	Price Kroner	+ or −	Div. %	Yld. %
Andelsbanken	142	...	12	7.7
Danske Bank	122¼	...	12	9.8
East Asiatic Co.	126¼	−¼	10	7.9
Finansbanken	153¼	+¼	16	10.5
Bryggerier	298	+¼	12	4.0
For Papir	108½	+½	—	—
Handelsbank	122½	...	12	9.0
G Nthn H (Kr80)	316½	−½	12	3.4
Nord Kabel	176¼	−¾	12	6.8
Novoind'stries B	209¾	+¼	10	4.8
Oliefabrik	130½xd	+1	6	—
Privatbank	136¼	−½	13	9.5
Provinsbank	140	...	12	8.6
Soph.Berensen	420	...	12	2.9
Superfos	156½xd	−½	12	7.5

GERMANY ♦

June 1	Price DM.	+ or −	Div. %	Yld. %
AEG	47.8	−0.5	—	—
AllianzVersich.	452	−4	31.2	3.6
BMW	215	−0.5	28.12	6.6
BASF	132.5	−1.0	18.76	7.1
Bayer	132	−1	18.75	7.1
Bayer.Hypo	245xd	−0.5	28.12	6.7
Bay. Vereinsbk.	258xd	−3	28.12	5.4
Commerzbank	187xd	−1.4	25.56	6.9
Conti Gummi	56.6	−0.5	—	—
Daimler-Benz	281	−4	28.12	5.0
Degussa	228	−5.1	26.56	5.8
Demag	149.5	−0.5	17.18	11.3
Deutsche Bank	258xd	−2.5	28.12	5.5
Dresdner Bank	201.5xd	−2.0	28.12	6.5
Dyckerhoffze't.	161	−1	9.38	2.9
Gutehoffnung	191.8	−1.7	18.75	4.9
Hapag Lloyd	91	−3.8	14.06	7.5
Harpener	142.5	+1.4	15.6	5.4
Hoechst	124.8xd	...	18.75	7.0
Hoesch	45	−0.1	—	—
Horten	125	−3	9.37	3.7
Kali und Salz	131	−2.5	1-.55	5.9
Karstadt	292.5	−5.5	23.44	4.0
Kaufhof	211	−6.8	25	5.9
Klockner DM.100	70	−2.5	—	—
KHD	175.5	−2.8	21.88	6.3
Krupp DM.100	81.5	−3.5	—	—
Linde	269	−2.8	25	4.6
Lo'brau DM.100	1,410	+10	25	0.9
Lufthansa	91.5	−1.0	9.36	5.2
M.A.N.	169xr	−2.5	21.88	6.3
Mannesmann	148.5	−2.5	17.18	5.9
Metallges	220.5xd	−0.5	12.5	2.8
Munchener Rck	550	−10.5	28.12	2.7
Neckermann	157.5	−3.0	—	—
Preus'gDM100	150.5	−1.5	—	—
RheinWestElect	165.2	−2.6	25	7.5
Schering	234	−1	28.12	6.0
Siemens	243.5	−3.3	25	5.1
Sud Zucker	243	...	17.88	3.7
Thyssen A.G.	86	−2.5	12.5	7.2
Varta	169	−0.5	16.16	5.0
VEBA	145.2	−0.9	9.38	3.2
Vereins&W'stBk	284	...	28.12	4.9
Volkswagen	223.5	−2.0	28.12	6.0

MILAN

June 1	Price Lire	+ or −	Div. Lire	Yld. %
ANIC	54	+1	—	—
Bastogi	855	+22	—	—
Fiat	2,780	+12	185	5.4

SPAIN ♥

June 1	Per cent	
Asland	107	− 3
Banco Central	309	− 3
Banco Exterior	252	+ 2
B. Granada (1,000)	134	—
Banco Hispano	266	− 2
Bco. I. Cat. (1,000)	143	—
Banco Madrid	202	—
B. Santander (250)	310	− 1
Bco. Urquijo (1,000)	244	—
Banco Vizcaya	267	− 2
Banco Zaragozano	235	− 4
Dragados	147	+ 5
Espanola Zinc	90	—
Fecsa (1,000)	55.50	− 0.5
Gal. Preciados	68	—
Hidrola	64.25	—
Iberduero	59.75	− 0.5
Petroliber	93	—
Petroleos	159.25	+ 1.0
Sniace	48	—
Sogefisa	129	—
Telefonica	75	—
Union Elec.	63	− 5.75

STOCKHOLM

June 1	Price Kronor	+ or −	Div. Kr.	Yld %
AGA AB (Kr. 40)	170xd	...	6	3.5
Alfa Laval(Kr.50)	121xd	+1	6	5.0
ASEA(Kr.50)	67.5	+0.5	5	7.5
Atlas Cop.Kr25	71.0xd	−4.5	5.8	8.2
Billerud	69	−1	—	—
Bofors	116	−1	5	4.3
Cardo	162	...	5.75	3.6
Cellulosa	243	−2	11	4.4
Elec'lux 'B'(Kr50	102xd	...	6.25	6.1
Ericsson B(Kr50	129xd	−1	5.5	4.4
Esselte (Free)	144	+1	4	2.8
Fagersta	112xd	...	4	3.6
Granges (Free)	49.5	+0.5	—	—
Handelsbanken	342	...	18.5	5.4
Marabou	145	...	9	6.3
Mo Och Domsjo	74	...	2.50	3.4
Sandvik 'B' Kr100	226xd	+1	5.50	2.5
S.K.F. 'B' Kr.50	57xd	...	4.5	7.9
Skand Enskilda	130	−1	9	6.8
Tandstik B(Kr50	63.0xd	+0.5	5	8.0
Uddeholm	68	...	—	—
Volvo (Kr 50)	75.5xd	...	7	9.3

SWITZERLAND ◊

June 1	Price Frs.	+ or −	Div. %	Yld. %
Aluminium	1,380	−5	8	3.1

TOKYO ¶

June 1	Prices Yen	+ or −	Div. %	Yld. %
Asahi Glass	336	−2	14	[illegible]
Canon	507	−13	12	[illegible]
Casio	730	5	25	[illegible]
Chinon	345	...	20	[illegible]
Dai NipponPrint	564	−9	18	[illegible]
Fuji Photo	595	−17	15	[illegible]
Hitachi	250	−1	12	[illegible]
Honda Motors	510	−7	18	[illegible]
House Food	890	−20	35	[illegible]
C. Itoh	413	+2	12	[illegible]
Ito Yokado	1,390	−20	30	[illegible]
Jaccs	505	−5	15	[illegible]
J.A.L.	2,910	−40	—	[illegible]
Kansai Elect.Pw	1,010	−20	10	[illegible]
Komatsu	340	−5	18	[illegible]
Kubota	280	−4	15	[illegible]
Kyoto-Ceramic	3,150	...	35	[illegible]
Matsushita Ind.	690	−6	20	[illegible]
Mitsubishi Bank	336	−4	10	[illegible]
Mitsubishi He'vy	149	...	12	[illegible]
Mitsubishi Corp	467	−9	13	[illegible]
Mitsui & Co.	312	−4	14	[illegible]
Mitsukoshi	478	−7	20	[illegible]
Nippon Denso	1,440	+20	15	[illegible]
NipponShimpan	620	...	12	[illegible]
Nissan Motors	695	−6	16	[illegible]
Pioneer	2,040	−90	48	[illegible]
Sanyo Elect.	326	11	12	[illegible]
Sekisui Prefab.	744	−12	30	[illegible]
Shiseido	1,050	−10	20	[illegible]
Sony	1,940	−50	40	[illegible]
Taisho Marine	246	−2	11	[illegible]
Takeda Chem.	447	−13	15	[illegible]
TDK	1,670	−50	30	[illegible]
Teijin	145	−3	10	[illegible]
Tokyo Marine	522	−3	11	[illegible]
TokyoElect Pow	905	−3	8	[illegible]
TokyoSanyo	454	+15	12	[illegible]
Toray	166	−1	10	[illegible]
Toshiba Corp.	145	−3	10	[illegible]
Toyota Motor	865	...	20	[illegible]

Source Nikko Securities, Tokyo

BRAZIL

June 1	Price Cruz	+ or −	Cruz Div.	Yld.
Acesita	1.20	...	0.14	[illegible]
Bancodo Brazil	1.70	−0.03	0.11	[illegible]
Banco Itau PN	1.32	...	0.10	[illegible]
Belgo Mi'eira OP	1.80	−0.05	0.10	[illegible]
Lojas Amer O.P.	2.20	−0.04	0.20	[illegible]
Petrobras PP	1.48	−0.02	0.13	[illegible]
Pirelli OP	1.23	−0.02	0.08	6.4
Souza Cruz OP	2.23	+0.03	0.08	[illegible]
Unip PE	4.60	−0.05	0.25	[illegible]
ValeRioDoce PP	1.74	...	0.15	[illegible]

Turnover Cr.143 442m. Volume 81 722m. Source: Rio de Janeiro SE.

HONG KONG

CANADA

OSLO

PARIS

AUSTRALIA

JOHANNESBURG

WALL STREET

NEW YORK

INTERNATIONAL CAPITAL MARKETS

INTERNATIONAL BONDS

BY FRANCIS GHILES

Waiting for the dollar window

HILE TRADING activity in Eurobond market remained a low ebb last week as bond ders met in London for the th anniversary of the ociation of International nd Dealers, institutional nand for dollar denominated urities remained strong.

As evidence points to a reces- n in the U.S., an increasing nber of bankers are coming believe that American erest rates have, if not ked, at least reached a teau for the time being. is, institutions are more ling to commit funds to d-interest bonds. New paper in short supply at present. ty two new issues were nounced last week, one for sse Nationale des Telecom- nications, the other for Alcoa of Australia. There is widespread expectation in the market that the pace of issuing activity will increase markedly this week.

Conversely, the Deutsche-Mark market has still failed to find a yield level at which investors can be attracted. Having delayed its monthly meeting by nearly two weeks the West German capital markets Sub Committee decided last Wednesday that only one new foreign DM issue, for Sweden, would be floated in the next month. There might possibly be another issue for a supranational entity (which is not technically included in the new calendar) if market conditions improve in the coming weeks.

Trading in the Swiss franc bond market remained nervous and prices of seasoned issues only rallied slightly last Thursday—the day the dollar was under some pressure.

Among the latest issues, the CNT offering, which was increased from an indicated $75m to $100m, met with a good reception. Terms announced by the lead managers, Goldman Sachs and BNP are final and the issue, which is entirely underwritten by the managers, yields 9.55 per cent.

The Alcoa offering, the first ever Eurobond for this borrower, carries an indicated coupon of 10 per cent. Credit Suisse First Boston is sole lead manager and there is no management group.

The pros and cons of bond issue arranged in this way were a talking point of the market, for the second week running. CSFB has already arranged two issues on this basis, the last one a convertible for Credit Suisse only two weeks ago, on the basis of tactics which lost quite a lot for dealers in the grey market.

But the sole manager technique is criticised by some other houses on two grounds. They argue that having a sole manager deprives the borrower, particularly if it is coming to the market for the first time, from the benefit of having more than one view of the market and at what terms the investor would be prepared to buy paper. In this instance they felt the terms were too generous for the investor.

The second charge levelled at the CSFB tactic is that it does little to create any goodwill from other banks vis-a-vis Alcoa. Furthermore, banks which invite CSFB into the management group of issues they managed should be able to count on reciprocity.

Other banks, however, agree with CSFB. They are strongly of the opinion that if CSFB, or for that matter any other bank, has the muscle to tackle an issue on its own, all well and good. The lead manager can keep all the management fee rather than have to split it.

The $30m issue for Dominion Bridge was priced at 100½ having caught the market at the right moment. It turned into a "hot" issue during the offering period.

Another issue which met with a favourable reception was the $40m FRN for Creditanstalt Bankverein. The firmness of the seasoned longer maturity FRNs sector, as much as the scarcity of Austrian paper explain this success, as well as the fact that a number of FRN issues have been redeemed ahead of schedule in recent weeks.

The latest Eurosterling entry, the £25m 12-year issue for the EIB, met with an indifferent response. It carried a coupon of 11½ per cent and was priced at 99. Last Friday, the first day of trading, the bonds were quoted at 97½.

CURRENT EUROBOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Lead manager	Offer yield %
U.S. DOLLARS							
‡††Jugobanka	50	1989	8.5	8⊕	100	Daiwa Europe	8.16⊕
‡†Banco Prov. B.Aires	30	1983/86	—	7¾⊕	100	Bankers Trust Int.	7.90⊕
‡†Long Term Credit Bank	50	1989	10	5½⊕	100	Credit Lyonnais	5.58⊕
‡§Credit Suisse	100	1993	—	4¾	100	Credit Suisse First Boston	4.75
‡††EIB	150	1999	15.5	10	99	Merrill Lynch, White Weld	10.38
‡††EIB	150	1987	8	9.875	99¾	Merrill Lynch, White Weld	10.17
Dominion Bridge	30	1984	5	10½	100½	Orion	10.12
‡†Creditanstalt Bankverein	40	1991/97	12	9½⊕	100	EBC	10.68⊕
†Banco Nac. Desenv. Econ.	50	1989	10	6⊕	100	EBC	10.75⊕
†BBL (Cayman) g'teed Bangkok Bank	30	1984	5	6½⊕	100	Man. Han., BNP	6.61⊕
‡†Thai Farmers Int. Fin. g'teed Thai Farm Bank	25	1984	5	7½⊕	100	Chemical Bk, CSFB	7.38⊕
†Banque Ext. d'Algérie	50	1989	7.37	7½⊕	100	Dillon Read	7.38⊕
‡CNT	100	1986	7	9¼	99¾	Goldman Sachs, BNP	9.55
Alcoa Australia	50	1989	8.5	10	*	CSFB	*
SWISS FRANCS							
Council of Europe	100	1989	n.a.	4¾	100	Banca del Gottardo	4.75
†Banque Ext. d'Algérie	50	1989	n.a.	4½⊕	100	Banque Gutzwiller, Soditic	4.30⊕
‡**§Citizen Watch	45	1984	n.a.	4⅛	100	Banque Julius Baer	4.17
‡**Tsubakimoto Chain	25	1984	n.a.	4¼	100	UBS	4.25
‡**§Sikisui Chemicals	60	1984	n.a.	4⅛	100	UBS	4.12
EIB	100	1991	n.a.	4½	100	UBS	4.44
‡Voest Alpine	90	1989	n.a.	4¾	100	Crédit Suisse	4.75
‡Unilever	100	1991	n.a.	4½	100	Swiss Bank Corp.	4.50
‡**§Showa Electric	30	1984	n.a.	4⅛	100	Swiss Bank Corp.	4.17
‡**§Ryobi Ltd.	20	1984	n.a.	4⅛	100	Crédit Suisse	4.17
‡**§All Nippon Airways	100	1985	n.a.	4	100	Swiss Bank Corp.	4.00
KUWAITI DINARS							
BNP	10	1989	7.25	7¾	100	Kuwait Investment Co.	7.75
CANADIAN DOLLARS							
‡Imnat	10	1984	5	10	99½	Kredietbank NV	10.13
STERLING							
‡EIB	25	1991	8.6	11½	99	Kleinwort Benson	11.66

* Not yet priced. ‡ Final terms. ** Placement. † Floating rate note. ⊕ Minimum. § Convertible. †† Registered with U.S. Securities and Exchange Commission. ¶ Purchase fund.
Note: Yields are calculated on AIBD basis.

UROBONDS

BY JOHN EVANS

Grey market hairs for AIBD

. RUPERT HAMBRO, the oming chairman of the Asso- ion of International Bond ilers, may consider one of most urgent tasks to be the ing of frictions which erged at the AIBD's two-day idon conference last week.

he controversy, which con- ns many market participants, olves the active and now hly-public technique of pre- ket Eurobond trading, the alled grey market.

s it stands, leading bond ing houses are muttering kly about retaliatory steps n the primary side against cessive" practices in pre- ket trading.

s for pre-market traders, a se of victory is being ressed after the decision of BD delegates to reject its rd's proposal which many would have effectively dis- raged a two-way market n developing in an issue ore it is signed.

Ir. Stanley Ross, whose firm Ross Securities now openly ertises itself as a pre-market ler, feels that primary kets will now have to come erms with what is a "natural ing evolution" in bond trad-

Ir. Hambro, in a diplomatic ment after his election last lay, believes that the grey ket issue can be solved ough the normal operation ree market forces and AIBD regulation.

ut he admits to concern at underlying feeling at the AIBD that the primary and secondary markets are increasingly tending to go their separate ways, with the grey market problem perhaps a symptom of this.

"I foresee that one of the AIBD's roles will be to bring the primary and secondary sectors much closer in the future, as both are obviously integral parts of the same market and must work together."

As for the primary side, many consider Credit Suisse First Boston's handling of the flotation of the $100m convertible issue for Credit Suisse and its consequent pricing tactics to be an opening shot in what may prove to be a long-running dispute over "grey" trading.

Many delegates complain, however, that the whole pre-market issue was aired at the AIBD in a confusing manner, and that the association's board should move speedily to clarify its policy.

Concessions

Since the mid-1970s, the large institutional investors have had an increasingly important say in the Eurobond market, and are probably the greatest factor in persuading new issue syndicate members to share much of their underwriting concessions in the form of a discount from the issue price.

The result has been the creation of a comprehensive grey market in bonds, on a when-issued basis, before the underwriting agreements have been signed.

The fact that some traders now publicly make markets for new issues at sizeable discounts has raised ethical problems for the primary houses.

Generally, at the decision of the underwriters, small investors are charged the full price for the issue while the more powerful institutions often receive a good portion of the commissions.

As a rule, borrowers in the Eurobond market pay a total 2½ per cent commission; ½ per cent going to the manager, ½ per cent to the underwriters and 1½ per cent to the seller. Effectively, primary houses like to handle all three functions, allowing them to offer the whole 1½ per cent selling commission to buyers.

The quotation of a new issue in the grey market of a poorly received issue at, say, two points discount is obviously a poor prospect for an investor who may receive solicitations to buy the bonds directly at the full subscription price.

The grey market defends itself by pointing out that it is a useful mechanism to prevent a general mis-pricing of a new issue, and discourages firms trying to capture new business by offering borrowers unrealistic terms.

Some believe that Rupert Hambro should favour a radical solution to the grey market problem and tackle it at the root by reducing selling group commissions to bring bond yields more in line with the overall market.

The high level of fees in the Eurobond market, compared with the New York bond market, creates the basis for pre-market transactions, they say.

Simultaneously, a more orderly approach to the marketing of bonds, through the formation of smaller and more controllable underwriting groups, may discourage the practice.

Persuade

Whether Mr. Hambro, as an AIBD representative, can persuade primary market participants to go along with such schemes is another matter.

But his bank—Hambros—is based in both the primary and secondary Eurobond sectors. He could therefore prove the ideal choice for creating greater co-operation between the two during his next three years of office.

Another proposal at the AIBD, to increase the size of a round lot trade to $25,000 from its present $10,000, was also defeated, to the disappointment of large market-makers.

Behind the move was an attempt to increase the size of transactions to which dealers are committed on the price they quote. Opposition stemmed from those houses dealing predominantly with the smaller, private investors, and where trades are generally smaller.

U.S. BONDS

BY DAVID LASCELLES

Some nerves begin to snap

IT WAS the merry month of May for some. The bond markets put on one of their strongest rallies in this interest rate cycle as signs multiplied that the economic boom was petering out. But last Thursday nerves began to snap and by the end of the week the market had given up a lot of its gains.

Most bonds managed to sustain a net advance on the week though. Yields on top grade, long-term corporate bonds narrowed by about five basis points (Bell System bonds closed with yields around 9.3 per cent). Treasury securities were more mixed: yields on short-term issues shed two or three basis points, but longer dated issues widened slightly.

The surge was fuelled by a series of data suggesting that the consumer had finally begun to cut back on his spending. Car and other durable sales are down, so are factory orders. Last week also brought news that the leading economic indicators had dropped 3.3 per cent, their sharpest fall for a long time.

Trends in the money supply were mixed. M1 averaged an unchanged $344.4bn and M2 was up $1.5bn to $894.4bn.

The Chase Money Market Report, analysing past interest rate cycles, says that a number of historical relationships suggest the potential for higher interest rates ahead. It says, for instance, that the 25 per cent increase in high grade corporate yields in this cycle compares with an average 50 per cent in the preceding four cycles. Even if the smallest of previous increases was applied to the present cycle, yields on such bonds would have to rise from their current 9.80 to about 11 per cent.

Chase comments: "While these relationships are by no means conclusive evidence that the recent rally will be completely erased, they certainly justify a cautious attitude."

Others take a more pragmatic view. Alan Lerner, economist at Bankers Trust, doubts that the recession has yet arrived. "The gradual ebbing of economic activity in tandem with the gasoline shortage has heightened expectations of a recession, but the timing still remains in doubt," he says.

"Our own view is that the downturn will not begin until the end of the first quarter or in the fourth quarter of this year. In the meantime, the economy is likely to score some moderate gains, generate enormous demands for credit, and give a poor inflation performance."

One indicator that supports this view is unemployment, which remained steady at 5.8 per cent in April while the number of job-holders rose slightly.

Last week's late plunge may also have been sparked by fears of an increase in the discount rate, the rate the Fed charges members of the system for loans through the discount window. This rate has remained unchanged at 9½ per cent since the dollar rescue package in November and is now a good source of cheap funds. But Mr. Henry Kaufman, at Salomon Brothers says "the Fed will probably not raise the discount rate until the next sharp increase in the money supply."

FT INTERNATIONAL BOND SERVICE

DOLLAR STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
O/S Cap. 10¼ 87	40	97¾	98¼	0	0	10.66
r Int. F. XW 7¾ 89	250	85	85½	+0½	+0½	9.65
A 9¼ 84-86	50	95¾	96¼	+0¼	+0¼	9.83
ada 9 83	400	96¾	97¼	0	+0¼	9.81
ada 9¼ 98	350	97¼	97¾	−0¼	0	9.78
adian Pacific 9¾ 89	50	98¼	98¾	−0½	+0¼	9.91
alco Inv. E. 10¼ 91	40	99¾	100¼	0	0	10.28
Chem. O/S 9¾ 84	200	98¾	99¼	0	0	9.78
9½ 98	125	†93½	94¼	−0¼	−0¼	10.08
9⅞ 88	150	99¾	100¼	−0¼	+0½	9.88
9⅞ 99	100	98¾	99¼	−0⅛	+0⅛	10.16
ort Dv. Cpn. 9.85 84	150	100½	101¼	−0⅛	−1⅛	9.84
ort Dv. Cpn. 9¾ 84	100	97⅞	98⅜	0	+0⅛	9.74
ortfinans 9 88	50	96⅜	96⅞	0	0	9.65
nd 9½ 86	100	97½	98	−0	0	9.96
Fin. 9⅞ 84	50	98¾	99¼	−0¼	−0¼	9.85
ld Int. Fin. 9⅞ 85	50	99¾	100¼	0	+0¼	9.73
pital O/S 9 83	25	97	97½	0	+0⅛	9.79
son Bay Co. 10 84	50	101¼	101¾	+0⅛	0	9.79
Finance 9¾ 90	50	92⅝	93⅝	0	−0⅛	10.83
Finance 10½ 93	40	98⅜	98⅞	−0¼	−0¼	10.98
Antilles 9½ 89	75	97½	98	−0⅛	+0⅛	9.88
itoba 9½ 89	75	97¾	98¼	−0⅛	+0¼	9.82
Brunswick 9¾ 94	75	98¼	98¾	0	0	9.94
foundland 10 84	50	100⅞	101⅜	0	+0¼	9.84
k Hydro 9⅜ 84	50	95⅜	95⅞	−0⅛	−0⅛	9.81
vay 9¾ 84	150	100⅝	101⅛	0	+0⅛	9.70
vay 9½ 84	150	98⅜	98⅞	−0⅛	+0⅛	9.76
Scotia Pwr. 9¾ 89	50	98½	99	−0⅛	+0⅛	9.99
land 10 84	60	97⅝	98⅛	−0⅛	−0⅛	10.50
bec Hydro 10 99	75	96½	97	0	+0⅛	10.39
and Fin. XW 9¾ 91	25	92⅞	93⅜	0	+0⅛	10.55
s Roebuck 9 82	150	98½	99	0	0	9.51
kholm 9¾ 94	50	99⅝	100⅛	−0⅛	+0⅛	10.00
den 9½ 89	100	99	99½	−0⅛	+0⅛	9.87
den 9½ 88	200	99	99½	−0⅛	+0⅛	9.88
8⅞ 93	150	95	95½	−0⅛	+0⅛	9.72
Leasing Intl. 10 84	20	97⅝	98⅛	0	+0⅛	10.57

TSCHE MARK STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
rican Ex. Int. 5½ 87	70	91	91¾	+0⅛	+1⅛	6.99
ntina 6½ 88	150	90	90⅝	−0¼	−0⅛	7.98
ntina 7½ 89	150	94	94⅝	−0⅛	0	8.35
tralia 6 88	250	92⅞	93⅜	0	+1⅛	7.01
ne 5¾ 90	150	86⅞	87½	−0⅛	+0⅛	7.46
o Desarrollo 7¾ 86	100	95⅜	95⅞	−0⅛	+0⅛	8.11
lays O'seas 6¾ 89	100	96⅜	96⅞	−0⅛	+0⅛	7.25
Ext. Algerie 7¾ 85	100	[illegible]	95⅞	−0½	−0⅛	8.16
il 7¼ 87	150	95⅞	96⅜	+0½	+1	7.91
A 6 88	150	89⅝	90	+0⅛	+0⅛	7.57
A 7 91	150	96⅜	96⅞	0	+0½	7.45
enhagen City 6 90	75	86½	87¼	−0⅛	−0⅛	7.77
ncil of Eur. 6¾ 88	130	90⅝	91⅛	+0⅛	+0⅛	7.59
ncil of Eur. 7¼ 89	100	97⅜	98⅛	−0⅛	+0½	7.54
mark 5¾ 85	100	93⅝	94⅛	+0⅛	+0⅛	7.06
mark 6½ 89	100	94	94½	+0⅛	+0½	7.32
6 90	300	86⅛	86⅝	−0⅛	−3⅛	7.83
6½ 91	200	91⅛	91⅞	−0⅛	+0⅛	7.62
obras-Brazil 7 87	100	94⅛	94⅝	−0⅛	+0⅛	8.00
fima 6½ 89	100	95⅝	96⅛	+0⅛	+1	7.04
and 6 83	150	98⅝	99⅛	+0⅛	+1⅛	6.32
nesia 7 84	100	96⅞	97½	+0⅛	+1⅛	7.66
al Fin. 7 89	150	97⅝	98⅛	0	+0⅛	7.29
ubishi Chem. 6½ 84	70	98⅜	99½	−0⅛	+0⅛	6.71
Zealand 6¾ 87	200	95¼	96	+0⅛	+0⅛	7.00
on Kokan 6½ 84	100	99	99½	0	+1	6.65
on Steel 5¾ 85	100	95	95½	+0⅛	+0⅛	6.67
on Tel. & T. 5½ 87	100	88½	89¼	−0⅛	+0⅛	7.40
dic Inv. Bk. 6¾ 86	60	94⅞	95⅜	0	+0½	7.17
ges Komm. 6¾ 89	150	90	90⅝	−0⅛	−0⅛	7.70
way 6¾ 84	200	99⅝	100½	+0⅛	+0⅛	6.71
dental 6¾ 90	150	92⅝	93½	0	+0⅛	7.66
6½ 88	100	96⅝	97½	0	+0⅛	6.91
6 87	40	91½	92½	0	−1⅛	7.40
oil 6 88	150	90⅝	91⅛	0	+0⅛	7.37
oil 6½ 89	150	†95⅝	96⅛	0	−1	6.98
o Elec. Pwr 6½ 85	200	96⅜	96⅞	−0½	+0⅛	7.27
Group 5¾ 83	65	93⅝	94½	0	+0⅛	7.40
ezuela 6½ 90	150	88⅛	88⅝	0	+0⅛	8.07
ld Bank 6¾ 88	400	91⅞	92⅜	0	+1⅛	7.49

SS FRANC STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
sa 5¾ 88	40	†101	101½	−0⅛	−0⅛	5.07
r. Exp. Int. 3½ 93	40	93⅜	93⅞	0	−0⅛	4.11
n Dev. Bank 3½ 94	100	84½	84¾	0	−0⅛	5.04
tria 3½ 93	100	87½	87¾	−0⅛	−0⅛	4.89
tralia 3¾ 89	250	93⅜	94	−0⅛	+0⅛	4.40
il 4¾ 88	100	95	95½	−0⅛	+0½	4.88
ada 3¾ 89	300	93⅛	94	−0⅛	+0⅛	4.41
se Manhattan 4 93	70	98⅞	99⅛	−0⅛	−0⅛	4.09
ncil of Eur. 4¾ 90	100	95	95⅝	+0⅛	+1½	4.81
kamerica 3¾ 93	80	92⅝	93⅛	−0⅛	−0⅛	4.42
E 5 88	75	100⅛	100½	−0⅛	−0⅛	4.95
mark 4½ 90	100	100⅝	101⅛	+0⅛	+1⅛	4.38
atom 4⅜ 93	80	c94	94⅝	+0⅛	+0⅛	4.83
Smidth 4½ 89	25	98⅛	98⅝	−0⅛	−0⅛	4.72
and 4½ 93	80	98	98½	−0⅛	+0⅛	4.67
n 4⅜ 89	35	92⅝	93	−0⅛	−1	5.21
Fin. NV 3½ 94	230	89⅜	89⅞	+0⅛	+0⅛	4.49
aysia 4¾ 90	80	96⅜	97¼	−0⅛	+0⅛	5.13
Zealand 3½ 84	120	89½	90	−0½	+0⅛	4.46
3¾ 91	100	91⅛	92	0	−0⅛	4.66
d Ost. Lande 4 90	80	93⅜	93⅞	−0⅛	0	4.78
ippines 4¾ 89	50	96⅛	96⅝	0	+0⅛	5.25
dvik 4 90	85	94⅛	95⅛	0	+0⅛	4.57
n 4 91	100	93⅛	93⅝	−0⅛	−0½	4.76
ina 4 93	100	91⅛	91⅞	−0⅛	−0⅛	4.82
ld Bank 4⅜ 93	250	95⅛	95⅝	−1⅛	+0⅛	4.70

YEN STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Asian Dev. Bank 5⅝ 88	15	86¼	87¼	−0¼	−0¼	7.81
Australia 5.6 83	30	93	94	−0¼	−0½	7.48
Australia 6½ 88	20	91½	92½	−0⅛	−0½	7.85
Finland 5.8 83	10	91⅞	92⅞	−0⅛	−0⅛	7.75
Finland 6.8 88	10	91⅞	92⅞	−0¼	+0¼	8.11

OTHER STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Nordic I. Bk. 9 84 SDR	20	97⅞	98⅛	0	0	9.62
Avco Fin. 10¼ 86 C$	25	96⅞	97⅜	−0⅛	−0⅛	10.86
Bk. Br. Col. 10¼ 89 C$	10	†97⅞	98½	+0⅛	−0⅛	10.56
Br. Col. MFA 10¼ 99 C$	24	98⅞	99⅜	0	+0⅛	10.35
Ex. Dev. Cpn. 10 84 C$	50	99½	100	0	+0⅛	10.06
Fst. Can. Inv. 10 84 C$	60	99⅛	99⅝	0	+0⅛	10.16
Hudson Bay 10½ 89 C$	60	100⅜	100⅞	0	+0⅛	10.39
Quebec 10¼ 86 C$	50	98⅜	98⅞	0	0	10.56
R. Bk. Canada 10 86 C$	40	100	100½	−0⅛	+0⅛	9.94
R. Bk. Canada 10 94 C$	40	96⅝	97⅛	−0⅛	+0⅛	10.45
Copenhagen 8¾ 91 EUA	25	97⅞	98⅜	+0⅛	0	8.48
Komm. Inst. 7½ 93 EUA	15	96¾	97½	+0⅛	−0½	7.91
Panama 8¼ 93 EUA	20	95¾	96½	0	−0⅛	8.76
SOFTE 8¾ 89 EUA	40	96¾	97¼	−0⅛	−0⅛	8.75
Algemene Bk. 8¼ 83 Fl	75	94½	95	0	−0⅛	7.88
CFE Mexico 7¼ 83 Fl	75	95⅞	96⅝	0	−0¼	8.85
EIB 7¾ 85 Fl	75	92⅞	93⅜	−0⅛	−0⅛	8.67
Ned. Middbk. 8¼ 84 Fl	75	99⅝	100⅛	0	−0⅛	8.24
New Zealand 6¾ 84 Fl	75	92⅜	92⅞	−0⅛	−0⅛	8.63
Norway 8½ 84 Fl	100	99	99⅜	0	−1	8.66
Elf Aquitaine 9¾ 88 FFr	150	97⅛	97⅞	0	0	10.13
EIB 9¾ 88 FFr	200	97½	98	0	−0⅛	10.12
Norway 9¾ 84 FFr	200	97½	98¼	0	−0⅛	9.81
PSA Peugeot 9¾ 87 FFr	175	97⅛	97⅝	0	−0⅛	10.22
Saint-Gobain 9¾ 86 FFr	130	97½	98¼	0	0	10.19
Solvay et Cie 9¾ 87 FFr	125	97⅛	98⅛	−0⅛	−0⅛	10.17
Total Oil 9½ 87 FFr	150	95½	96¼	−0⅛	−0⅛	10.15
Unilever 10 85 FFr	100	99⅝	100⅛	0	−0½	10.03
CECA 9¾ 89 £	20	91½	92¼	−0⅛	−0⅛	11.01
Citicorp 10 93 £	20	90½	91¼	0	0	11.33
EIB 9¾ 88 £	25	92½	93¼	+0⅛	+0½	11.05
Finance for Ind. 13 91 £	15	103	103½	+0⅛	+0½	12.44
Gen. Elec. Co. 12½ 89 £	50	101¼	101¾	+0⅛	+0⅛	12.23
Euratom 8 87 LuxFr	500	98¾	99¼	−0¼	−0⅛	8.21
Norges Km. 8 86 LuxFr	500	96⅝	97⅝	−1½	−1½	8.52
Oslo, City of 8 89 LuxFr	500	97¾	98¾	−0⅛	+0⅛	8.26
Solvay Fin. 8 85 LuxFr	500	97⅞	98⅞	−0⅛	+0⅛	8.32
Swedish Bk. 8 88 LuxFr.	500	97⅝	98⅝	−0¼	−0⅛	8.29

FLOATING RATE NOTES	Spread	Bid	Offer	C.dte	C.cpn	C.yld
BFG Fin. Co. M5.5 89	0¼	98⅞	99⅜	12/7	12.4	12.51
Banco di Roma M6 87	0¼	98½	99	26/10	11.19	11.33
Bco. El Salvador M8 83	1¼	94⅞	95⅝	12/10	12¼	12.86
Bco. Nac. Argent. 7 86	0¼	97¾	98¼	22/9	11½	11.73
Banco Urquijo 6 86	0¼	97¾	98¼	21/9	11½	11.73
Bank of Tokyo M5½ 93	0¼	98⅜	98⅞	18/10	11⅝	11.91
Bq. E. d'Alg. M8.375 84	0⅞	97⅝	98	9/8	11⅞	12.16
Bq. Ext. d'Alg. M7.5 85	0⅞	95½	96	2/11	11⅞	12.42
no et Suez M5½	0¼	99⅝	100⅛	25/7	12	12.02
BNP 5½ 91	0¼	98½	99	22/2	11⅜	11.52
Ch. Man. O/S M5¼ 93	0¼	99⅜	99⅝	27/7	11.73	11.80
Citicorp O/S Fin. 6 94	0¼	99½	100	8/6	11.06	11.09
Gotabanken M8 88	0¼	98¼	98⅞	15/5	11½	11.66
Ind. Bk. Japan M5¼ 85	0¼	99½	100	1/6	12.35	12.38
LTCB Japan M5¼ 85	0¼	99⅛	99⅝	9/10	11⅝	11.67
Mfrs. Han. O/S M5¼ 94	0¼	99⅛	99⅝	23/8	11.19	11.26
Midland Intl. M5¼ 93	0¼	99⅜	99⅞	20/7	12¼	12.33
Nipp. Crdt. Bk. M5.5 85	0¼	99⅜	99⅞	22/6	12.81	12.86
OKB M5¾ 88	0¼	99⅜	99⅞	18/10	11.44	11.48
Offshore Mining 86	0¼	99¼	99⅝	19/7	12.19	12.26
Petro Mexicano M7 84	0¾	99	99½	24/7	12.06	12.15
Privredna Banka M8 86	0⅞	96	96½	22/6	13.44	13.84
Sundsvallsbnkn. M6 85	0¼	97⅞	98¼	4/10	11.06	11.27
Texas Int. Air M7 86	0¼	97¼	97⅞	11/10	11⅛	11.52
TVO Pwr. M9 91 (D-L)	0¼	98¼	98¾	24/11	11⅛	11.29
Utd. Overs's Bk. M6 89	0¼	97⅝	98⅛	29/9	11.14	11.38

CONVERTIBLE BONDS	Cnv. date	Cnv. price	Bid	Offer	Chg. day	Prem
Baker Int. Fin. 5½ 93	1/79	34	†121	122	−1⅞	2.84
Boots 6¼ 93	2/79	2.16	98⅜	99⅜	+0½	−6.67
Ciba-Geigy O/S F. 4 94	9/79	675	91⅝	92⅝	+0⅛	−15.83
Coca-Cola Bottling 6¾	4/79	9	†89	90	−0⅛	19.33
Esselte 7¼ 89	9/79	159	95¼	96⅞	−0⅛	7.58
Honda Motor 5½ 89	5/79	532	†93	94	−2	5.71
Ito-Yokado 5¾ 93	6/78	1339	102⅞	103⅞	−2½	1.86
Nitto Elec. Ind. 6 94	7/79	735	†92	93	−2	8.83
Novo Industri 7 89	4/79	259	87½	89½	−0⅛	13.36
Texas Int. Air. 7½ 93	4/79	14.5	89¼	90½	−0½	19.78
Thorn Int. Fin. 7 88	11/78	3.67	131	131⅞	+0⅛	−3.94
Asahi Optical 3½ DM	12/78	588	†81⅞	82⅞	−1⅞	4.36
Casio Co. 3½ 85 DM	11/78	841	86⅝	87⅝	−0⅛	18.64
Fujitsu 5 84 DM	7/79	475	100	101	−1	17.30
Jusco 3½ 86 DM	1/79	1154	81¼	82¼	−1⅛	23.74
Kansai Elec. 4 84 DM	4/79	1350	86⅝	87⅝	−0⅝	22.19
Konishiroku 3½ 85 DM	1/79	612	84½	84⅞	−1½	19.30
Marudai Food 3½ DM	2/79	1033	82¼	82⅞	−0½	33.14
Murata M. 3½ 86 DM	11/78	854	87	88	0	13.22
Nippon Ysn 3½ 85 DM	1/79	251	115⅛	115⅞	+1	−0.84
Nissan Diesl. 3½ 86 DM	2/79	477	88	89	−0⅛	5.53
Olymp. Opt. 3½ 85 DM	2/79	703	90½	91½	−0⅛	1.04
Sharp Con. 3½ 88 DM	2/79	487	†91½	92½	−0⅛	11.92
Stanley Elec. 3½ DM	11/78	623	81½	82½	+0⅛	40.61
Tokyo Elec. 3½ 87 DM	4/79	476	90⅛	91⅛	−0⅛	29.79
Tokyu Ld. Cp. 4 86 DM	4/79	493	86	87	−0½	12.24
Trio-Knwd. 3½ 86 DM	11/78	711	80⅛	81⅛	−0⅛	26.10

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BONDTRADE INDEX AND YIELD

	Medium term		Long term	
June 1 ...	95.03	8.71	88.94	9.49
May 25 ...	—	—	—	—
High '79...	95.75	(1/2)	89.99	(30/1)
Low '79 ...	94.40	(11/1)	88.87	(28/2)

EUROBOND TURNOVER

(nominal value in $m)

	Cedel	Euroclear
U.S. $ bonds		
Last week ...	540.2	1,589.3
Previous week ...	490.2	1,291.7
Other bonds		
Last week ...	302.8	369.4
Previous week ...	286.1	369.8

* No information available—previous day's price.

† Only one market maker supplied a price.

STRAIGHT BONDS: The yield is the yield to redemption of the mid-price: the amount issued is in millions of currency units except for Yen bonds where it is in billions. Change on week = Change over price a week earlier.

FLOATING RATE NOTES: Denominated in dollars unless otherwise indicated. M = Minimum coupon. C.dte = Date next coupon becomes effective. Spread = Margin above six-month offered rate for U.S. dollars. C.cpn = The current coupon. C.yld = The current yield.

CONVERTIBLE BONDS: Denominated in dollars unless otherwise indicated. Chg. day = Change on day. Cnv. date = First date for conversion into shares. Cnv. price = Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem = Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

The list shows the 200 latest international bonds for which an adequate secondary market exists. The prices over the past week were supplied by: Bondtrade; Kredietbank NV; Credit Commercial de France; Credit Lyonnais; E. F. Hutton Services SARL; Commerzbank AG; Deutsche Bank AG; Westdeutsche Landesbank Girozentrale; Banque Internationale Luxembourg; Kredietbank Luxembourg; Algemene Bank Nederland NV; Pierson, Heldring and Pierson; Credit Suisse/Swiss Credit Bank; Union Bank of Switzerland; Akroyd and Smithers; Bankers Trust International; Banque Francaise de Credit International; Citicorp International Bank; Daiwa Europe NV; Deltec Trading Company; Dillon Read Overseas Corporation; EBC; First Chicago; Goldman Sachs International Corporation; Hambros Bank; IBJ International; Kidder Peabody International; Merrill Lynch; Morgan Stanley International; Nesbitt Thomson; Salomon Brothers International; Samuel Montagu and Co.; Scandinavian Bank; Strauss Turnbull and Co.; Sumitomo Finance International; S. G. Warburg and Co.; Wood Gundy.

Closing prices on June 1

This announcement appears as a matter of record only.

New Issue in Canada

Can.$100,000,000

CANADIAN IMPERIAL
BANK OF COMMERCE

10.10% Debentures
(Semi-annual interest)

To be dated June 14, 1979

To mature June 15, 1984

Price: 100 and accrued interest

Copies of the offering circular may be obtained from such of the undersigned and other dealers as may lawfully offer these securities for sale.

Dominion Securities
Limited

Richardson Securities of Canada
Wood Gundy Limited
A. E. Ames & Co. Limited
Pitfield Mackay Ross Limited
Greenshields Incorporated
Burns Fry Limited
McLeod Young Weir Limited
Merrill Lynch, Royal Securities Limited
Nesbitt Thomson Securities Limited
Walwyn Stodgell Cochran Murray Limited
Midland Doherty Limited
Bell Gouinlock Limited
McLean, McCarthy & Company Limited
Lévesque, Beaubien Inc.
Pemberton Securities Limited
Equitable Securities Limited
Casgrain & Company Limited
Odlum Brown & T. B. Read Ltd.
F. H. Deacon, Hodgson Inc.
Burgess Graham Securities Limited
Mead & Co. Limited
John Graham & Company Limited
Houston Willoughby Limited
R. A. Daly & Company Limited
Scotia Bond Company Limited
René T. Leclerc Incorporée
Molson, Rousseau & Co. Limited
Davidson Partners Limited
Bache Halsey Stuart Canada Ltd.
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May, 1979

FT Monthly Survey of Business Opinion

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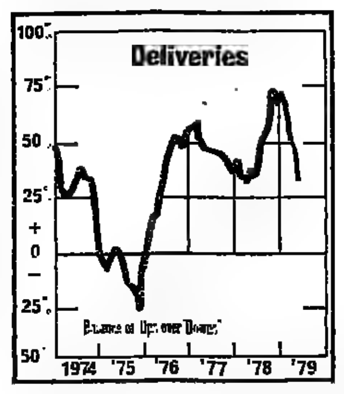
GENERAL OUTLOOK

Election boosts confidence



THE CONSERVATIVE victory in the general election was the main reason for a further rise in confidence among businessmen last month. There was a sharp improvement in the level of optimism over both the prospects for the UK economy and the general business outlook.

Last month's survey included new interviews with companies in the electrical engineering sector, consumer durables and stores and consumer services companies, who were last covered in January.

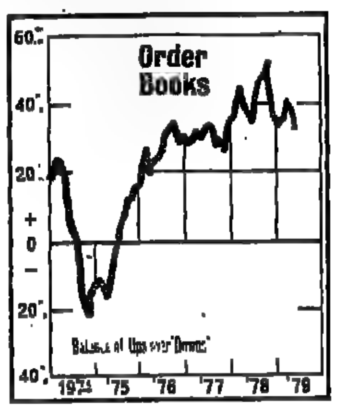
The improvement in the two indices follows a steady fall from the middle of 1978 and a slight recovery in April. As well as the change of Government other factors mentioned were that wage increases had not been as great as feared and that last January's expectations had been affected by the bad weather.

All three sectors were less inclined to report increased deliveries than they had been last January, so this index continued the fall that started in that month.

The consumer durables group was less hopeful of increasing its exports over the next 12 months than at the beginning of the year, although the stores sector was more hopeful. On an export-weighted basis the index covering prospects continued the downward movement that began in September.

ORDERS AND OUTPUT

Pick-up in demand



THERE WERE more signs of a pick-up in demand last month, with a further rise in the index for new orders over the previous four-month period.

In spite of this, expectations for orders over the next 12 months fell back, with both the electrical engineering and consumer durables sector less inclined to expect increases in their order books than they had been last January.

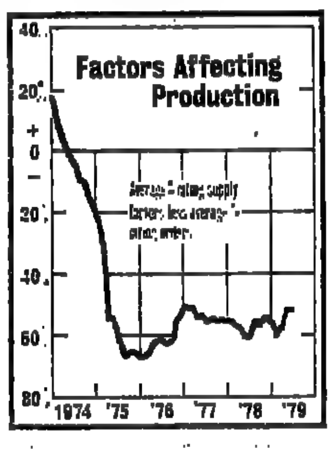
Among the reasons given by businessmen in the stores sector for the pick-up in orders was a buying surge caused by anticipated increases in VAT. Further factors helping orders were increases in the number of outlets or agents, the weathes and an expected improvement in UK tourism after last year's downturn.

Although the two manufacturing sectors of electrical engineering and consumer durables expected greater increases in their output over the next 12 months, the stores sector was more inclined to say it expected sales to rise by less than 10 per cent than it had been last January.

As a result, the index for the median expected increase in turnover over the next 12 months, which had been rising, dropped back from 7.4 to 6.9 per cent.

CAPACITY AND STOCKS

Further below plan



THE INDEX covering the extent to which industry was working to capacity lost the ground it had regained last month. This was because the electrical engineering group was more inclined to say it was operating at below planned output levels than it had been last January.

There was a slight increase in the level of expected stocks for the next 12 months, mainly in raw materials and work in progress. However, there was no change in the index covering the level of stocks in relation to current sales trends.

Demand remained the more important factor in determining the level of output. There was no change overall in this index, which had been moving slightly towards citing supply factors in the previous two months.

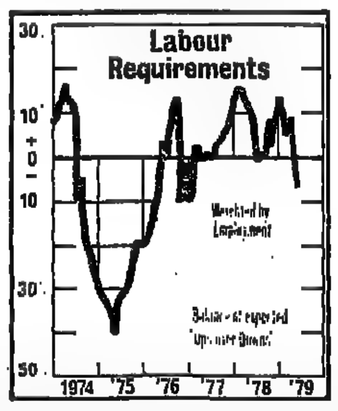
Fewer companies said output was affected by factors associated with manual labour or executive staff, while there was some increase in the number which mentioned shortages of components. There was also a slight reduction in the number of companies which mentioned a shortage of export orders as a constraint.

CAPACITY WORKING

	4 monthly moving total				May 1979		
	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Above target capacity	13	10	12	9	—	5	33
Planned output	61	67	62	70	67	58	53
Below target capacity	26	22	25	19	33	37	14
No answer	—	1	1	2	—	—	—

INVESTMENT AND LABOUR

Decline in jobs expected



THE INDEX for labour requirements dropped back for the second consecutive month in May, with all three sectors less inclined to expect their labour forces to increase over the next 12 months.

The index now shows quite a substantial excess of companies saying they expect their labour force to decline over those who say they expect them to increase.

Companies were more inclined to mention product demand as affecting the number of employees than the structure of labour supply factors. In particular there was less emphasis on the potential cost of redundancy payments or other aspects of employment legislation.

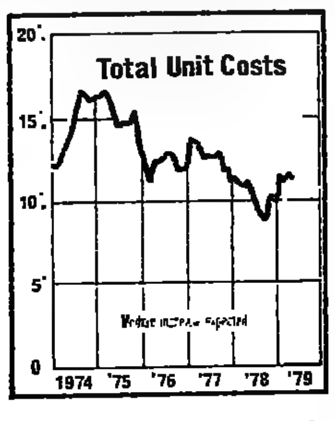
The survey comments that this is exactly the trend one would expect under the Conservative Government's policy. "The present shift of opinion may, of course, simply be due to a number of respondents' awareness of this fact."

Investment plans were little changed. While the electrical engineering group was more inclined to say that its capital expenditure would decrease over the next 12 months, this was balanced by a more optimistic outlook from the stores sector.

COST AND PROFIT MARGINS

Wage expectations rise

COMPANIES were more inclined to expect higher wages costs than before, although they expected smaller increases in unit costs. Nevertheless the index covering the expected level of profit margins continued the decline of the previous two months.



On the wages front both the electrical engineering and stores sectors were more inclined to expect increases of 15 per cent or more than previously. This pushed up the median expected wage increase from 12.5 to 12.8 per cent.

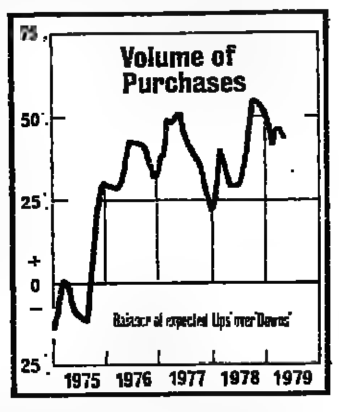
The drop in the median expected rise in unit costs—from 11.5 to 11.1 per cent—reflected lower estimates for the next 12 months in both the consumer durables and stores groups.

Both the electrical engineering and consumer durables groups were less optimistic about improving their profit margins than in January, with customer resistance to price increases, higher wage levels, increased costs and the difficulty of securing productivity improvements mentioned as factors.

These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based upon extensive interviews with top executives.

Three sectors and some 30 companies are covered in turn every month. They are drawn from a sample based upon the FT-Actuaries' Index, which accounts for about 60 per cent of all public companies.

The all-industry figures are four-monthly moving totals covering some 120 companies in 11 industrial sectors (mechanical engineering is surveyed every second month).



Complete tables can be purchased from Taylor Nelson and Associates.

GENERAL BUSINESS SITUATION

	4 monthly moving total				May 1979		
Are you more or less optimistic about your company's prospects than you were four months ago?	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
More optimistic	40	32	31	31	46	21	60
Neutral	31	33	35	43	32	20	40
Less optimistic	29	35	34	26	22	59	—

EXPORT PROSPECTS (Weighted by Exports)

	4 monthly moving total				May 1979		
Over the next 12 months exports will be:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Higher	61	57	61	67	73	63	56
Same	23	34	30	22	—	1	40
Lower	16	9	9	10	27	36	—
Don't know	—	—	—	1	—	—	4

NEW ORDERS

	4 monthly moving total				May 1979		
The trend of new orders in the last 4 months was:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Up	61	59	50	49	46	63	77
Same	18	13	14	16	54	—	17
Down	13	15	15	14	—	32	—
No answer	8	13	21	21	—	5	6

PRODUCTION/SALES TURNOVER

	4 monthly moving total				May 1979		
Those expecting production/sales turnover in the next 12 months to:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Rise over 20%	7	9	6	3	—	—	—
Rise 15-19%	2	8	8	11	2	—	3
Rise 10-14%	25	20	19	15	32	53	13
Rise 5-9%	22	20	21	21	33	10	43
About the same	38	37	36	31	33	11	30
Fall 5-9%	1	1	1	1	—	—	—
No comment	5	5	9	18	—	26	11

STOCKS

	4 monthly moving total				May 1979		
Raw materials and components over the next 12 months will:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Increase	44	41	42	36	56	26	67
Stay about the same	45	47	42	45	33	64	30
Decrease	8	8	8	7	11	10	—
No comments	3	4	8	12	—	—	3
Manufactured goods over the next 12 months will:							
Increases	30	30	32	25	24	27	33
Stay about the same	45	43	39	47	22	43	61
Decrease	9	9	8	7	—	21	—
No comments	16	18	21	21	54	10	6

FACTORS CURRENTLY AFFECTING PRODUCTION

	4 monthly moving total				May 1979		
	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Home orders	78	76	81	79	78	16	70
Export orders	50	54	60	67	54	37	17
Executive staff	8	16	16	19	11	—	—
Skilled factory staff	27	26	27	27	76	64	—
Manual Labour	8	14	10	12	—	10	—
Components	6	2	3	4	43	11	—
Raw materials	11	11	12	14	—	11	6
Production capacity (plant)	13	13	11	4	—	—	17
Finance	—	1	1	1	—	—	—
Others	9	10	10	7	—	5	13
Labour disputes	27	27	18	26	22	26	37
No answer/no factor	6	3	3	5	—	26	13

LABOUR REQUIREMENTS (Weighted by Employment)

	4 monthly moving total				May 1979		
Those expecting their labour force over the next 12 months to:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Increase	17	21	26	27	—	9	37
Stay about the same	58	38	57	51	100	64	50
Decrease	24	20	17	22	—	27	13

CAPITAL INVESTMENT (Weighted by Capital Expenditure)

	4 monthly moving total				May 1979		
Those expecting capital expenditure over the next 12 months to:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Increase in volume	50	52	53	46	15	58	50
Increase in value but not in volume	13	9	6	8	15	14	33
Stay about the same	14	19	23	23	29	—	17
Decrease	22	20	16	16	41	13	—
No comment	1	—	2	7	—	15	—

COSTS

	4 monthly moving total				May 1979		
Wages rise by:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
5-9%	10	14	14	19	—	10	14
10-14%	66	60	61	55	78	36	50
15-19%	18	16	14	11	22	—	36
20-24%	1	1	1	1	—	—	—
No answer	5	12	10	14	—	54	—
Unit cost rise by:							
0-4%	3	1	1	1	—	—	14
5-9%	26	25	26	26	46	42	27
10-14%	45	47	46	45	22	32	53
15-19%	11	11	10	11	11	—	3
Same	3	3	3	3	—	—	—
Decrease	4	4	4	—	—	—	—
No answer	8	9	10	14	21	26	3

PROFIT MARGINS

	4 monthly moving total				May 1979		
Those expecting profit margins over the next 12 months to:	Feb.-May %	Jan.-Apr. %	Dec.-Mar. %	Nov.-Feb. %	Elect. Eng'g. %	Consumer Durables %	Stores %
Improve	34	37	43	40	54	26	23
Remain the same	44	41	35	47	44	31	77
Contract	20	20	20	12	2	31	—
No comment	2	2	2	1	—	12	—

Tronoh Mines Malaysia Berhad

(Incorporated in Malaysia)

Extracts from the Statement by the Chairman, Encik Junus Sudin, for the year ended 31st December, 1978.

Past Year's Performance

Total production of the company's subsidiaries was 39,824 piculs which exceeded the previous year's performance by 2,671 piculs.

As a result of the higher tin price and production, the mining profit recorded by the subsidiaries at $12,094,000 was 38% above the previous year's level.

The share of profits of associated companies fell from the 1977 level, although not to the extent predicted, again because of the high tin price. However, the reduction was more than off-set by the increase in the subsidiaries' mining profit and in interest receivable. The group's profit before taxation and extraordinary items was therefore, $24,497,000, a rise of $1,989,000 or 9% over the previous year.

The profit attributable to the company, after deducting minority interest, was $8,641,000 compared with $7,225,000 for the previous year. The earnings per share before extraordinary items were 82 cents (1977: 83 cents).

Dividend

An interim dividend of 25 cents per share, less tax at 40%, for the year ended 31 December 1978 was paid on 3 November 1978.

Your board feels it would not be prudent for the company to pay any further dividend in respect of the year ended 31 December 1978. However, an interim dividend of 80 cents per share, less tax at 40%, for the year ending 31 December 1979 has been declared payable on 22 June 1979 to shareholders on the registers on 8 June 1979. In addition to this interim dividend, it is expected that the company's usual pattern for paying dividends will be maintained for the financial year ending 31 December 1979.

Projections for Current Year

It is expected that the total production of the company and its subsidiary, Bidor Malaya Tin Sendirian Berhad for the current year will fall below that achieved in 1978. However, group profit will not be materially affected because the contribution by associated companies to profit should be maintained at the level that prevailed in 1978.

Developments During the Year

Consequent upon the liquidation of Tronoh Mines Limited, the company took over all the assets and became legally responsible for all the liabilities of that company with effect from 1 January 1979.

Associated Mines (Malaya) Sendirian Berhad, a company which is 51% owned by your company, effectively ceased operations during 1978 and sold its fixed assets.

In the South Selangor Project, there are positive indications that a joint venture agreement will be concluded before the end of this year.

Following the signing of a joint venture agreement for the Tapah Road Project in October 1978, Timah Dermawan Sendirian Berhad, whose shareholders are Perak State Development Corporation (30%), Malaysia Mining Corporation Berhad (40%) and the company (30%), was set up to operate the project. Production from Timah Dermawan is expected to commence in 1981.

It was reported in my statement last year that the company had not been able to secure conversion to mining title of a part of an area at Ayer Kuning, within which sufficient reserves had been proved that would extend the life of one of the dredges by 10 years. Appeals have been made to the authorities for reconsideration of the company's application and your board is hopeful that a favourable solution will emerge in view of the close rapport the company has with the state authorities.

An attractive offer was received during the year for the assets owned by the Thailand Joint Venture in which your company had a 21.7% interest. All the partners of the joint venture were of the unanimous view that the offer should be accepted and as a result, the joint venture was dissolved in November 1978. The project managers have since received the initial proceeds, of which your company's share amounts to US$977,000. In the event of successful conversion by the purchaser of the outstanding mining lease applications your company will receive a further US$217,000.

13 May 1979

Copies of the Report and Accounts and Chairman's Statement can be obtained from the Registrars, Charter Consolidated Limited, P.O. Box 102, Ashford, Kent TN24 8EQ and 40 Holborn Viaduct, London EC1P 1AJ.

PLANT & MACHINERY SALES

Description	Telephone
ROLLING MILLS 20in x 20in x 350 hp Two High Reversing Mill. 5in x 12in x 10in wide variable speed Four High Mill. 3.5in x 8in x 9in wide variable speed Four High Mill. 10in x 16in wide fixed speed Two High Mill. 10in x 12in wide fixed speed Two High Mill. 16in x 16in wide fixed speed Two High Mill. 6in x 16in x 20in wide Four High Mill.	0902 42541/2/3 Telex 336414
CUT/LENGTH LINE 1000 mm x 2 mm.	0902 42541/2/3 Telex 336414
CUT/LENGTH LINE 750 mm x 3 mm.	0902 42541/2/3 Telex 336414
NARROW STRIP ROLLING MILL, two stand, rwf.	0902 42541/2/3 Telex 336414
SLITTING LINE 920 mm x 10 ton coil by Cam.	0902 42541/2/3 Telex 336414
SLITTING LINE 300 mm x 1 ton coil by Cam.	0902 42541/2/3 Telex 336414
350 hp REVERSING MILL, 20" x 30" rolls. Farmer Norton.	0902 42541/2/3 Telex 336414
PLATE SHEAR 4ft x 4in CINCINNATI.	0902 42541/2/3 Telex 336414
GUILLOTINE 8ft x 0.125in PEARSON.	0902 42541/2/3 Telex 336414
No. 1 FICEP SCRAP SHEAR, 75 x 34 mm bar.	0902 42541/2/3 Telex 336414
SHEET LEVELLING ROLLS, 920 and 1150 mm.	0902 42541/2/3 Telex 336414
HYDRAULIC SCRAP BALING PRESS Fielding & Platt.	0902 42541/2/3 Telex 336414
FORGING HAMMER, 3 cwt. slide type. Massey.	0902 42541/2/3 Telex 336414
VACUUM FURNACE 100 kw. Herdiekerhoff.	0902 42541/2/3 Telex 336414
AUTOMATED COLDSAW, non ferrous. Noble & Lund.	0902 42541/2/3 Telex 336414
WIRE DRAWING MACHINE 8 BLOCK (16"). Arboga.	0902 42541/2/3 Telex 336414
WIRE DRAWING MACHINE 6 BLOCK (22"). Marshall Richards.	0902 42541/2/3 Telex 336414
ROD DRAWING MACHINE 9 DIE. Barcro.	0902 42541/2/3 Telex 336414
DRAWBENCH, 15 ton pull x 40ft draw. Platt.	0902 42541/2/3 Telex 336414
HORIZONTAL DRAW BLOCK 36in. Farmer Norton.	0902 42541/2/3 Telex 336414
BAR & TUBE REELING MACHINE (2"). Platt.	0902 42541/2/3 Telex 336414
WIRE DRAWING MACHINE 9 DIE cone type. Unity.	0902 42541/2/3 Telex 336414
WIRE DRAWING MACHINE 15 DIE cone type. Marshall Richards.	0902 42541/2/3 Telex336414
ROTARY SWAGING MACHINE, Marshall Richards.	0902 42541/2/3 Telex 336414
SURFACE MILLING LINE, 16" non-ferrous strip.	0902 42541/2/3 Telex 336414
McKAY 8' SHEET METAL PROCESSOR.	01-928 3131
UPSET FORGING MACHINE 4in dia. 750 ton.	01-928 3131
WICKMAN 1⅜ 6SP AUTOMATIC. Reconditioned.	01-928 3131
WICKMAN 2¼in 6SP AUTOMATIC. Reconditioned.	01-928 3131
WICKMAN 2⅝in 6SP AUTOMATIC. Reconditioned.	01-928 3131
CINCINNATI CENTRELESS GRINDER. Excellent.	01-928 3131
1500 TON CLEARING D A PRESS Bed 180" x 96".	01-928 3131
200 TON VICKERS CLEARING PRESS. Bed 36in x 40in Air Clutch & Brakes as new.	01-928 3131
200 TON SCHULER HIGH SPEED PRESS. 200 spm.	01-928 3131
LUMSDEN GRINDER 84" x 24" magnetic chuck.	01-928 3131
HEID COPY LATHE 36" dia. x 50." Reconditioned.	01-928 3131
FISCHER COPY LATHE TYPE 18/150.	01-928 3131
WIEDMANN TURRET PRESS TYPE BRA/41 as new.	01928 3131
NATIONAL COLD HEADERS ¼" x ⅝" dia. recon.	01-928 3131
200 TON DEEP DRAWING PRESS.	01-928 3131
BARBER & COLMAN 16-16 HOBBER, as new.	01-928 3131
USED CRANES AND TRAILERS.	(0705) 475438 Telex 86709

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Lec Refrigeration LIMITED

Points from the Accounts and Statement by the Chairman, Mr. C. R. Purley

★ Group turnover of £26.8 million (1977—£26.7 million) considerably lower than expected due largely to closure of Londonderry factory and a very difficult period of intense competition.

★ Pre-tax profits of £1,563,160 (1977—£1,644,489) reflect a reasonable result. Total dividend for year 4.32365p, maximum permitted.

★ Sales currently improving after a slow start—new models well received. Cautiously optimistic for the future.

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● NEWS ANALYSIS— BACON

Overseas suppliers take 59% of British market

BY CHRISTOPHER PARKES

LAST YEAR overseas suppliers carved another fat slice off the British bacon market and increased their share two points to 59 per cent, according to figures published by the Ministry of Agriculture.

There is no doubt that the Danes, Dutch and Irish have gained considerable advantages in the past five years from the European Community's monetary compensatory amount subsidies on their exports, but as sterling has strengthened and the impact of the MCAs has been moderated by political and economic forces, the underlying weakness of the British bacon industry has become more apparent.

'Three big bacon factories have closed already this year and more are threatened—as much by the industry's own inefficiencies and lack of cohesion as any danger the Europeans may pose.

There are about 220 curers in the country, but more than half of these are small, local businesses with well-established local markets supplied from simple premises with low overheads. They are relatively safe from the incursions of the sophisticated overseas shippers.

More at risk are the bigger companies, heavily capitalised and in direct competition at the top end of the market with the Danes and the rest. More than 80 per cent of British bacon output is concentrated in the hands of some 35 of these large-scale processors.

The the top of the heap sits FMC. Farmer-controlled, with ten curing factories, FMC alone produces some 26 per cent of UK bacon. And it is feeling the pinch worse than most with two factories closed since December, one under threat and more in dire straits.

The industry feels that if a national brand of bacon could be developed and marketed centrally with all the consistency aid flair shown by the Danes, then the UK business could recover and even prosper modestly.

But political and commercial strife in the trade has so far prevented any real progress. FMC is plugging gamely away with its Crown brand, but senior officials admit its promotion is negligible when viewed against the sales effort put in by the Danes.

The main conflict between the leading curers is the often-reported clash of interests between farmers and the processors.

On the one side are the "commercial" companies buying, killing, salting and smoking pigs. On the other sits FMC which has been accused of suffering from commercial schizophrenia.

Largely owned by the National Farmers' Union Development Trust, FMC's loyalties appear to be split between tending the interests of the *curing industry as an entity in* itself and ensuring that farmers who supply the raw material are cushioned as far as possible from the worst pressures coming from the commercial marketplace.

Because FMC leads the *market, the other curers are* forced to follow closely in its wake and seem unable to take any independent action.

Voices from the opposition say that the UK industry should beat an orderly retrat, contracting gently and rationalising radically, aiming to consolidate its holding in the home bacon market at about 35 per cent—6 per cent less than now. This FMC cannot allow because it would inevitably lead to pig farmers suffering even more hardship than at present and many would be forced out of business for want of outlets for their pigs.

It appears to have elected instead to make its own economies in factory plant and labour, closing works, transferring the displaced pigs to its other curing works, hoping to maintain its market share.

The Danes and Dutch, meanwhile, are steadily overtaking British bacon makers. The Dutch, for example, hardly seen in the UK market two years ago, expect to have 10 per cent of all sales this year.

Indications are that in spite of their brave efforts, FMC and the others in the top league might be heading into even deeper water. By processing bacon likely to be displaced on the shop counter by imports, tthey could ultimately end up fighting a price-cutting war among themselves which no one can truly afford.

Last year pre-tax, pre-interest margins in the bacon curing business, were less than 0.8 per cent, according to recent estimates. And that leaves *nothing to spare for extravagances* like price wars.

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You know your business is well run and has good prospects. But that's not the kind of information that is always obvious from a set of accounts. Unless your bank manager sees your business as well as your books, we think he's unlikely to get a clear picture of your company's true state of health.

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If you'd like to talk to a bank that's willing to take the trouble to find out what lies behind your balance sheet, talk to your local Williams & Glyn's manager. Or write to: Marketing Development Office, Williams & Glyn's Bank Ltd., New London Bridge House, 25 London Bridge St., London SE1 9SX.

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der. Normal control cab, left-
d drive, to be used in the
rt areas and restricted confined
ces. Rear-mounted pump with
water tank of 1,000 gallons
acity and 100 gallons foam tank.
t-Aid hose reel smoke extrac-
equipment. Suction and
very hoses and equipments and
losed locker stowage.
Ambulance, for use within the
t area and confined spaces.
troke petrol engine, stretcher and
ommodation for two persons in
npartment. cab for two persons
h adjustable seat for driver, left-
d drive steering, optical and
lible warning system, plus first-
equipment, tools and acces-
ies.

CARGO HANDLING EQUIPMENT

Forklift trucks, 3,000 Kg. Diesel.
Mobile Cranes, 10-ton capacity at 4 ft radius from bumper tip, Diesel.
Tractors for 5-ton loaded trailers, Diesel.
Trailers, 5-ton capacity for the above tractors.
Aluminium Dockside Articulated Gangway, 34 ft long, mobile.

proceeds of a credit provided
the International Development
ociation will be applied to
gible payments for the above
chases. Tendering is open to
nufacturers in member countries
the World Bank and in Switzer-
d, or their bona fide duly
pointed exclusive export agents.
plications for tender documents
uld be made to: The Crown
ents for Overseas Governments
Administrations, 4 Millbank,
stminster, London, SW1.
gland, quoting the reference
IC/BURIDAPORT 8/12471 for the
icles and PE3E/BURIDAPORT
6713 *for the cargo handling*
ipment. Applications should be
eived at the Crown Agents office
ore 30th June 1979 and should
te precisely for which items of
uipment tender documents are
uired.

URKISH STATE RAILWAYS (TCDD)

The Chairmanship of Central
rchasing and Sales Commission
Ankara-Gar/Turkey

nders are invited for Railway
ack Renewal Machines and Equip-
nts consisting of the following
ms of which the technical
tures are written in the speci-
ations.

) Machine for preparation of the auxiliary track.
) Special Ballast Regulator.
) Gantry set: 2 double legged cranes (with sleeper beam) and transporting wagon for cranes.
) Track Liner.

The above material are to be purchased through bids received from countries which are members of the World Bank and Switzerland.

The bidding documents prepared for this purpose in Turkish and English can be purchased from TCDD's Central Cash Office in Ankara and Sirkeci Cash Office in Istanbul at a price of TL. 1,000.—.

The bids shall be received by or handed in person to our commission not later than TUESDAY, JULY 10, 1979, at 15.00 hours *to hold a meeting at TCDD* Supply Department on that date.

TCDD shall be completely free whether to award contract(s) for all or some of the items to any bidder at its sole discretion.

Tender Announcement for Nominated Sub-Contracts

The Government of the State of Qatar will shortly invite bids for the Architectural Finishes Nominated Sub-Contract for the University of Qatar which is situated approximately 5 km north of Doha.

The University comprises approximately 73,000 sq m of lowrise academic buildings of high quality located on a 14 hectare site.

The Sub-Contract will comprise Joinery and Associated Works with Applied Finishes, Suspended Ceilings and Decorations. Applications to participate should be sent as soon as possible but not later than 29 June, 1979, to:

The Technical Advisor to His Highness the Amir,
The Amir's Office,
P.O. Box 923,
Doha, Qatar.

Copy to Ove Arup & Partners, 13, Fitzroy Street, London W1P 6BQ.

The application must be accompanied by:

1. List of *major projects recently completed.*
2. List of current projects quoting value and percentage completion with contract completion date.
3. Complete financial statement (audited) for the past five years.

Interested firms should have an annual turnover of 35,000,000 QR. Tender documents will be available at the Amir's Office for pre-qualified bidders priced 5,500 QR.

Full details of incorporation of company, clarification of *relationship of any* proposed joint venture and name of local agent must be supplied. Firms not supplying any of the information may be excluded from participating.

The Main Contract period will be approximately 40 months. It is the intention to invite bids from a select list of pre-qualified bidders at a date which will be appropriate for letting the Sub-Contract.

Tenders will be valid for 90 days after submission. Tender and performance bonds will be required. The Sub-Contract will be let on a fixed price basis.

COMPANY NOTICES

To the holders of
THE BURMAH OIL COMPANY, LIMITED
5½% Dollar Bonds Due 1988
Convertible into Registered Ordinary Shares of the "*Shell*" Transport and Trading Company, Limited

NOTICE IS HEREBY GIVEN pursuant to the conditions of the said Bonds and section 4.07 of the Indenture dated as of October 1, 1968, between The Burmah Oil Company, Limited, and Morgan Guaranty Trust Company of New York that, consequent upon the implementation by The "Shell" Transport and Trading Company, Limited, ("Shell"), of a 1-for-1 capitalisation issue of Ordinary Shares to its Ordinary shareholders, the Conversion Rate specified in Section 4.01 of the Indenture has been increased to 192 registered Ordinary Shares of "Shell" per Bond with effect from April 13, 1979. The adjusted rate will be applied by the Company in accordance with the terms of the Indenture to all conversions received on and subsequent to that date.

THE BURMAH OIL COMPANY, LIMITED
Registered Office
48, St. Vincent Street
Glasgow

June 4, 1979.

BLUE CIRCLE INDUSTRIES LIMITED
NOTICE TO HOLDERS OF BEARER WARRANTS

NOTICE IS HEREBY GIVEN to the holders of the Company's Ordinary Stock Warrants to Bearer that, following a resolution passed at the Annual General Meeting of the Company held on 31st May, 1979, a Final Dividend of 7.2122p per £1 unit of Ordinary Stock of the Company for the year ended 31st December, 1978, together with a Supplementary Final Dividend of 0.0978p per £1 unit of Ordinary Stock in respect of the year ended 31st December, 1977 (total: 7.31p) will be paid upon presentation of COUPONS NO. 36.

Warrant holders who are employees of the Company or any of its subsidiary companies, should follow the instructions shortly to be displayed on Company notice boards; warrant holders who are not employees must present their *COUPONS NO. 36 to the Company* at the address shown below through an Authorised Depositary, e.g., Banker, Solicitor or Stockbroker, on or after 11th June, 1979.

By Order of the Board.
H. W. R. HAM, Secretary.

Portland House,
Stag Place,
London SW1E 5BJ.
1st June, 1979.

EXHIBITIONS

GROSVENOR HOUSE ANTIQUES FAIR, Park Lane, W.1. 13 June 5.00 p.m. to 10.00 p.m. 14-23 June, 11 a.m. to 7.30 p.m. Closed Sunday. Admission £2.00 including illustrated handbook.

TENDERS FOR GREATER LONDON BILLS

1. The Greater London Council hereby give notice that Tenders will be received at the Chief Accountant's Office, (Bank Buildings), Bank of England, London EC2R 8EU, on Monday, 11th June, at 12 noon for Greater London Bills to be issued in conformity with the Greater London Council (General Powers) Act, 1967, to the amount of £25,000,000.
2. The Bills will be in amounts of £5,000, £10,000, £25,000, £50,000, £100,000 or £250,000. They will be dated Thursday, 14th June, 1979, and will be due 91 days after date, without days of grace.
3. Each Tender must be for an amount not less than £25,000, and must specify the net amount per cent. (being a multiple of one new halfpenny) which will be given for the amount applied for.
4. Tenders must be made through a London Banker, Discount House or Broker.
5. The Bills will be issued and paid at the Bank of England.
6. Notification will be sent by post, on the same day as Tenders are received, to the persons whose Tenders are accepted in whole or in part and payment in full of the amounts due in respect of such accepted Tenders must be made to the Bank of England, by means of cash or by draft or cheque drawn on the Bank of England not later than 1.30 p.m. on Thursday, 14th June, 1979.
7. Tenders must be made on the printed forms which may be obtained either from the Bank of England, or from the Council's Offices at The County Hall.
8. The Greater London Council reserve the right of rejecting any Tenders.

M. F. STONEFROST,
Comptroller of Financial Services.
The County Hall,
London SE1 7PB.
4th June, 1979.

GOVERNMENT OF MAURITIUS

Ministry of Agriculture and Natural Resources and the Environment

BULK SUGAR TERMINAL—PORT LOUIS
FRONT END LOADERS

CONTRACT NO. 13

Tenders closing at 1.30 p.m. on Wednesday, 1st August 1979, are invited for the following works for the Bulk Sugar Terminal at Port Louis, Mauritius, in accordance with the Specification and General Conditions of Contract for Contract No. 13.

The Contract is for the supply and delivery free into store on the Site of two rubber tyred, 4 cubic metre capacity, Front End Loaders.

Specification and General Conditions of Contract may be examined at the offices of the Consulting Engineers, Macdonald Wagner & Priddle *Pty. Ltd., at Port Louis, Mauritius, and at North Sydney N.S.W.,* Australia, and also at the Mauritius High Commission, 32/33 Elvaston Place, London, S.W.7, England, and the Mauritius Embassy, 68 Boulevard de Courcelles, 75017, Paris, France.

Specification and General Conditions of Contract for companies registered in Mauritius may be obtained from Macdonald Wagner & Priddle Pty. Ltd., Rogers Automotive Building, Cnr. Edith Cavell & Mere Barthelemy Streets, Port Louis, and for companies registered in all other countries they may be obtained only from Macdonald Wagner & Priddle Pty. Ltd., 100 Miller Street, North Sydney, N.S.W., 2060, Australia—Telex No. 20836. The non-refundable charge for each set of documents obtained in Mauritius is 360 Mauritian Rupees and 50 Australian Dollars in Australia.

Envelopes endorsed "Tender for Contract No. 13, 'Front End Loaders,' Bulk Sugar Terminal—Port Louis" and containing a Tender accompanied by a Tender Deposit are to be addressed to the Chairman, Tender Board, Ministry of Finance, Port Louis, Mauritius, and lodged in the Tender Box, at the Chief Cashier's Office, Accountant General's Division, Treasury Building, Chaussee, Port Louis, Mauritius, or posted from overseas to reach the Chairman, Tender Board, Ministry of Finance, Port Louis, Mauritius, on or before the closing time and date.

The Tender Board does not bind itself to accept the lowest or any tender and will not assign any reason for the rejection of a tender.

Ministry of Agriculture &
Natural Resources & The Environment

NOTICE

CONTROLLER OF STORES, SUDAN RAILWAYS
P.O. BOX 65, ATBARA, SUDAN
INVITES TENDERS FOR THE SUPPLY OF THE FOLLOWING:

CONTRACT NO	DESCRIPTION	CLOSING DATE
5177	Supply of P.W.M. for 90 LBS Rails	Saturday 21/7/1979
5178	Supply of P.W.M. for 75 LBS Crossing Stations	Saturday 21/7/1979
5179	Supply of Building Materials	Saturday 21/7/1979
5180	Supply of Hardwood Sleepers	Monday 23/7/1979
5181	Supply of Creosote	Monday 23/7/1979

Details specifications and Drawings can be obtainable from Sudan Government, Purchasing Agent, 3-5 Cleveland Row, St James's SW1 1DD on payment of £22.50 for one set of details, specification and drawings for Contract No 5177, £10.50 for one set of details, specification and drawings for Contract No 5178. £3.00 for one copy of details and specification for Contract No 5179. £1.50 for details and specification for Contract 5180 and £1.50 for one copy of details and specification for Contract No 5181. (Sterling) by Cheque or Postal Order in favour of "The Sudan Government Purchasing Agent" Cash will not be accepted.

The closing dates stated are fixed at 12 noon and tenderers are to ensure that their tenders are posted in good time to reach the Office of Controller of Stores, P.O. Box 65, Atbara, Sudan, before that time.

CONTROLLER OF STORES

Mouvement Populaire de la Révolution
République du Zaïre

Régie des voies fluviales

B.P. n° 11.697/Kinshasa

Avis d'appel d'offres international

La Régie des Voies Fluviales lance un appel d'offres International pour la fourniture d'

UNE OU DEUX VEDETTES D'INSPECTION

La participation est ouverte à toutes les entreprises des pays membres de la Banque Mondiale et de la Suisse.

Les soumissionnaires peuvent retirer moyennant paiement de la somme de 100,— zaïres, le dossier complet de l'appel d'offres auprès du :

Secrétariat de la Direction Générale
REGIE DES VOIES FLUVIALES
Avenue Lumpungu n° 109 — Kinshasa/Gombe

ou auprès de l'Ambassade du Zaïre dans leur pays. Aux cent zaïres peut se substituer un montant équivalent dans une des quinze devises librement convertibles admises au change par la Banque du Zaïre et qui sont :

Les francs français, belge, C.F.A. et suisse, les dollars nord-américain et canadien, les couronnes danoise, norvégienne et suédoise, la livre sterling, le mark ouest-allemand, la lire italienne, le florin néerlandais, le schilling autrichien et l'escudo portugais.

La date limite de réception des offres est fixée au 16 juillet 1979 à 15 heures (heure locale).

Les offres cachetées doivent être adressées à :

Administrateur Délégué Général
REGIE DES VOIES FLUVIALES
Boîte Postale 11.697/Kinshasa 1 — Zaïre

L'appel d'offres est international et les ambassades intéressées sont invitées à retirer le dossier d'appel d'offres à l'adresse indiquée ci-dessus.

Les soumissionnaires sont invités à assister, à la séance publique d'ouverture des offres qui aura lieu dans la Salle de conférence de la Direction Générale — avenue Lumpungu n° 109 à Kinshasa le 16 juillet 1979 à 15 heures (heure locale).

REGIE DES VOIES FLUVIALES
l'Administrateur Délégué Général,
Mondombo Sisa Ebambe

WADHAM STRINGER

ROLLS-ROYCE

Official Distributors for Rolls-Royce and Bentley.

H. A. FOX
34 Dover Street, London. Tel. 01-499 8962

1978 June Rolls-Royce Silver Shadow II Saloon. Chestnut, Beige leather. Speedometer reading 1,350 miles.

1978 June Rolls-Royce Silver Shadow II Saloon. Caribbean Blue, Magnolia leather. Speedometer reading 6,250 miles.

1977 May Rolls-Royce Silver Shadow II Saloon. Brewster Green, Tan leather. Speedometer reading *5,500 miles.*

1976 Aug. Rolls-Royce Silver Shadow Saloon. Regency Bronze, Dark Brown leather. Speedometer reading 24,000 miles. £26,500

1976 Feb. Rolls-Royce Silver Shadow Saloon. Pewter, *Green leather. Speedometer reading 39,500 miles.* £25,000

1976 Jan. Rolls-Royce Silver Shadow Saloon. Walnut, Beige leather. Speedometer reading 41,000 miles. £25,000

1974 May Rolls-Royce Silver Shadow Saloon. Shell Grey, Green leather. Speedometer reading 38,000 miles. One owner. £22,750

1974 Apr. Rolls-Royce Silver Shadow Saloon. Regency Bronze, Red leather. Speedometer reading 45,000 miles. £21,950

1973 May Rolls-Royce Silver Shadow Saloon. Black over Walnut, Black leather, electric sliding sunroof. Speedometer reading 38,600 miles. £18,950

1973 May Rolls-Royce Silver Shadow Saloon. Walnut, Beige Everflex roof, Beige leather. Speedometer reading 59,000 miles. £17,950

GUILDFORD
Woodbridge Road, Guildford, Surrey. Tel. 69231, Tlx. 859255

1978 Sept. Bentley T2 finished in Brewster Green with Beige hide. 5,000 miles.

1978 Mar. Rolls-Royce Silver Shadow II finished in Cardinal Red with Beige hide upholstery. Fitted with *hide dashboard and picnic tables. 10,500 miles.*

1977 Oct. Rolls-Royce Silver Shadow II finished in Larch Green with Magnolia hide piped in Green. Magnolia kneeroll and radio surround, Green Everflex roof. 10,500 miles.

1976 May Rolls-Royce Silver Shadow finished in Shell Grey with Surf Blue hide upholstery. 35,000 miles.

1975 Mar. Rolls-Royce Silver Shadow finished in Peacock Blue with Beige hide. 33,000 miles.

TORQUAY
Lisburne Square, Torquay. Tel. (0803) 24321

1976 Jan. Rolls-Royce Corniche 2-door Saloon finished in Silver Chalice with a Black Everflex roof and Red upholstery. Speedometer reading 23,750 miles. £38,500

1977 Aug. Rolls-Royce Silver Shadow Series II Saloon. Willow Gold, Brown Everflex roof and Beige hide upholstery. Speedometer reading 8,000 miles. Price on Application

1974 Aug. Rolls-Royce Silver Shadow Saloon Flared Arch Model finished in Seychelles Blue with Blue hide upholstery. Speedometer reading 61,000 miles. £19,250

1969 Jan. Bentley T Series Saloon finished in Shell Grey with Red hide upholstery. One owner. Speedometer reading 33,000 miles. £15,500

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some special finance.

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West End Executive Cars

offer the following exceptional motor cars:

Rolls-Royce Silver Shadow II
1977 Scots Pine, 7,000 miles

Rolls-Royce Silver Shadow I
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Rolls-Royce Silver Shadow I
1976 Silver Sand, 26,000 miles

Porsche 928 Automatic
1979 Petrol Blue, 1,000 miles

Porsche Turbo, 3.3 litre, Gold
Delivery mileage

The above are only a small selection of our range of luxury motor cars. For full details, telephone J. Wildman on 01-229 6681.

Brighton Car Concessionaires

NEW FERRARI FOR EARLY DELIVERY

308 GTB Black/magnolia
308 GT4 Metallic green/tan
[illegible] 12 French racing blue/magnolia
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M-Benz 450 SLC Silver/red leather '77S
M-Benz 280 SE Red/tan cloth '77T
M-Benz 250 Yellow/moss cloth '77R
Ferrari 308 GT4 Red/black leather '79T
Ferrari 308 GT4 Metallic red/tan leather '78S
Ferrari 246 GTS Black/black '74M
Porsche 924 Black/grey cloth '77R

Distributors for Ferrari Brighton (0273) 698411 OPEN 7 DAYS A WEEK

DAIMLER VANDEN PLAS 4.2

1975 (March). Metallic Beige with Champagne leather and Black vinyl roof. Automatic. PAS and the fullest specification, including air-conditioning, tinted glass, electric windows, chrome wheels, centre locking, radio/stereo, etc., 20,000 only. Chauffeur driven. Works maintained. Virtually as new.

£7,350

GRANADA 2.8 G.L. AUTOMATIC

1978 Model in Metallic Blue with matching interior. Automatic power steering, steel sunroof, tinted glass, radio/stereo. Many other extras. 9,000 miles only. Virtually as new condition throughout.

£5,950

The above cars are company executive sales. Terms/Leasing facilities could be arranged for prospective purchaser. Both cars are offered for any trial and examination.

Please contact Mr. Buxton, tel: (0263) 219183/219208.

MOTOR CARS

MERCEDES-BENZ IN LONDON

450 SLC 78 (S). Icon/black tabacco, a/cond., a/wheels, ESR. 6,800 miles. £23,450
450 SLC 79 (T). Silver green/moss velour, a/cond., ESR, radio/stereo. 2,600 miles. £24,950
450 SEL 79 (T). Black/parchment, air cond., a/wheels, cruise control 1,000 miles £22,950
450 SEL 79 (T). Gold/charcoal, air cond., a/wheels, ESR. 7,000 miles. £23,450

450 SEL Apr. 78 (T). Met. blue/parchment leather, air cond., ESR, cruise control. 7,000 miles. £21,450
350 SL 1978. White/black cloth. ETW, a wheels, rear seat. 3,500 miles. £19,750
350 SE 78 (S). Milan brown/tabacco leather, ESR, air cond., a wheels, cruise control. 11,500 miles. £18,450

127, PARK LANE, LONDON W1
01-629 5831

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Mercedes 250 1977. Signal red/parchment cloth, having travelled 25,000 miles, fitted electric sunroof, tinted glass, radio/stereo. £9,450
Mercedes 280 CE 1978 Model. Finished in Milan brown/tobacco velour, having travelled 13,000 miles, finished with electric sunroof, electric tinted windows, alloy wheels, radio stereo £14,150

Mercedes 280 CE 1978 Model Met. light blue/parchment cloth, having travelled 13,000 miles, fitted with electric sunroof, elec. tinted windows, radio. £13,995
Mercedes 280 SE 1977. Colorado beige/tabacco cloth, having travelled 25,000 miles. Fitted all usual extras £12,850
Mercedes 350 SE 1977. Topaz brown/tabacco cloth, having travelled 22,000 miles. £14,550

164, WATFORD ROAD,
WEMBLEY, MIDDX
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"ROLLS-ROYCE OWNERS REGARD YOU WITH BARELY CONCEALED JEALOUSY. ONE OF THE REASONS FOR THIS IS THAT YOU CAN CUT SO MANY DIFFERENT DASHES WITH THE 412. PERHAPS IT AND THE R-R CORNICHE ARE THE ONLY LARGE CONVERTIBLES NOW BEING MADE, BUT THE 412 IS MUCH MORE BESIDES." (Extract from MOTOR)

412/S2 Convertible Saloon
£29,264 or lease.

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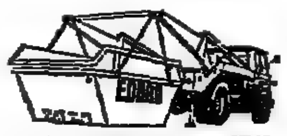

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1979 (T) 450 SEL. Milan brown, velour, air cond, e/roof.
1979 (T) 350 SE. Mimosa yellow, velour, air cond, e/roof, Berlin remote control radio, stereo.
1979 (T) 350 SE. *Metallic silver blue, blue velour, air cond, e/sunroof.*

QUALITY CARS

1979 (T) Daimler 4.2 Series III in damask with tan leather. Chrome wheels, electric door mirror. Delivery mileage.
1978 (T) BMW 525 Automatic. Light green with moss velour, tints, sunroof, radio/stereo, full history. £8,950.
1978 BMM 323i. Sunroof, tints, alloy wheels, radio/stereo.
1979 (T) *Model Porsche 928 Automatic in petrol blue with check* velour, air cond, radio/stereo. 1,150 miles.
1979 (T) MGB GT in red with striped cloth, radio. 1,100 miles.

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1930 Rolls-Royce 20/30 coupe WITH ONLY 13,500 MILES. Please telephone for details.
1956 Bentley (S1), Mulliner Park Ward 2-door, Continental. Only two owners. In superb condition.

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1977 MERCEDES BENZ
350 SE AUTOMATIC

Finished in metallic blue with beige trim
One previous owner, this vehicle having covered some 24,000 miles, comes complete with power sliding roof, metallic paint, alloy wheels, cruise control and passenger door mirror

£15,500

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Series II Daimler Double Six Vanden Plas in Biascon blue. Also a Series II Daimler Double Six *in silver grey.*

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ROLLS-ROYCE. Vintage 1937, yellow/black. Dursley 3134.
RANGE ROVER 79. Del. mileage, PAS, tints. £11,495. Turbo charging and automatic gearbox. 01-247 8541.
PANTHER LIMA. May 1978. 11,000 miles only. Spoiler, tonneau, chrome wire wheels, laminated screen, blue/silver. £5,545. Phone 0789 66254.
MERCEDES 350 SLC. Met. silver green, LHD. 38,000 km. R reg., manual, elec. sun roof, air conditioning, radio stereo. Price £14,200 one. Phone 09904 3868.

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We are the best buyers of low mileage, good condition Rolls-Royce cars. We have clients waiting for 1972-1979 Silver Shadows, Corniches, etc.

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SHADOW II 1978

Finished in Walnut/Beige, Everflex roof. Beige hide interior. *£13,000 miles.* Indistinguishable from new.

£35,950

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MS 20 £2,000

CC 55 £2,250
TC 1 £8,000

MC 70 £2,000
GH 11 £3,000

75 ALF	£395	GL 99	£2,000	JJ 2	£2,750	25 PH	£750
APW 9	£850	GH 11	£3,000	JP 44	£2,000	2250 PH	£250
9707 AW	£160	GD 67	£950	JO 12	£2,500	446 PP	£250
550 BOB	£495	88 GAC	£275	JOY 609	£450	RJ 80	£1,500
CA 78	£1,500	GEA 75	£295	47 JDM	£275	RHH 99	£375
CN 53	£1,500	GLA 24	£295	KEN 15	£1,350	RD 700	£700
1 CAL	£1,750	GF 6	£3,000	KSH 5	£850	RC 64	£1,750
50 CCJ	£195	1 GLK	£990	321 KM	£300	RH 16	£1,750
DE 60	£1,500	GBC 27	£295	LE 34	£1,500	RCA 2	£850
DFF 90	£450	GH 315	£650	LEC 6	£395	RES 82	£400
50 DTM	£320	HEB 57	£450	7 LAE	£375	SEP 98	£275
EGS 943	£250	HB 25	£1,500	LB 3334	£395	TC 051	£300
7 EMO	£750	7 HJF	£395	LS 3333	£950	TUJ 1	£1,500
EC 71	£2,000	HJC 100	£325	3400 MG	£275	T 80	£3,000
EE 11	£3,000	HJG 67	£295	MEN 8	£425	111 TJH	£325
F 9	£3,000	HT 33	£1,500	MHC 90	£300	SS 21	£2,250
FP 2	£3,000	77 HK	£550	6,000 ME	£750	3 WKR	£300
FS 300	£1,750	HAP 20	£320	MS 122	£750	WCF 22	£250
38 FTM	£250	66 JBP	£350	95 NG	£450	WJH 66	£240
700 FAB	£350	888 JGW	£325	0 8	£5,000	WHJ 900	£240

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1 HLO	£1,150	BH 10	£2,550	JT 4	£2,950	EN 43	£725
JVE 1	£1,350	DC 10	£2,595	JF 12	£1,950	SA 7777	£950
KY 1	£2,450	DH 99	£1,795	106 JON	£250	18 SKT	£195
NAA 1	£1,295	8228 DN	£190	92 KX	£250	840 SC	£275
POP 1	£2,450	5 E90	£375	LYN 530	£530	374 RW	£225
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With the current chaotic delivery situation on new luxury cars which in turn fosters a strong "premium" market, it is confusing to say the least to know whether to buy now and pay a premium or wait at the bottom of the dealer's list and hope for the situation to improve. Through our own contacts, we are able to obtain hard-to-get models for immediate or short term delivery. For example, at present for 7 day delivery we offer—

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BMW 633 CSi Auto, 1977. Met. copper, 18,000 miles. Superb condition £13,500

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'T' Registration

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9092.
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1979 928 Automatic. Guards Red. Black/White interior, all usual refinements, low mileage
1979 911 SC Sport Targa. *Petrol Blue with Cork interior,* 6,000 miles only, a fine example.
1978 924 Lux. Malaga Red/Beige interior, radio, one owner.

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1979 MERCEDES-BENZ 450 SEL. Astral Silver, Black leather interior, air conditioning, electric sunroof, alloy wheels, Becker Mexico stereo, plus all usual Merc refinements, 1,000 miles only.
1978 MERCEDES 280 CE. Icon Gold Met., Black Par check int., elec. sunroof, electric windows, rear headrests, Blaupunkt stereo, 9,000 *miles only,* full service history, £13,750.
1978 Model MERCEDES 280 CE. English Red, Parchment Check cloth, air cond., electric windows front and rear, wash/wipe H/L, stereo, 11,000 miles only, £12,500.
1979 BMW 320 Man. Arctic Blue Met., Blue cloth int., manual sunroof, tints, radio, delivery mileage
1978 BMW 320. Iberian Red, Black cloth int., tinted glass, 10,000 miles only *with service history,* £5,850.
1978 BMW 323i. Cashmere Met., Beige cloth int., manual sunroof, tints, alloys, PAS, delivery mileage
1977 (T) BMW 320i. Reseda Met., Beige int., tinted glass, radio/stereo, 13,000 miles only, £5,795.
1978 DAIMLER SOVEREIGN 4.2 Auto. Old English White, Red leather int., Black vinyl roof, all usual refinements, 8,000 miles, £9,995
1978 (T) JAGUAR 4.2 Auto. White, *Biscuit leather int., thin mirrors,* stereo, 3,000 miles only, £10,250
1978 BMW 633 CSi Auto. Fjord with Red leather, all usual refinements, 11,000 miles only.

MERCEDES-BENZ

1977 450 SE. Metallic Milan brown, brown leather, air cond. 8,900 miles. £17,250.

1976 450 SLC. White, red leather, air cond. 20,000 miles. £17,250.

1976 450 SLC. Metallic silver, blue leather, air conditioning, sun roof. 48,000 miles. £15,950.

1977 350 SE. Metallic silver, blue velour, sunroof, headlamp wipers. £15,250.

1978 350 SE. Metallic Milan brown, parchment cloth, sunroof, cruise control. £16,950

1976 350 SE. Metallic blue, parchment cloth, electric sunroof, radio. 21,000 miles. £15,500.

1978 280 E W123. Mimosa, moss green cloth, 26,000 miles. £9,750.

1977 280 E. Cavenne orange, black cloth, sunroof, alloy wheels. £10,500

1977 250. White, black interior, sunroof, tinted glass, radio. £8,950.

1976 308 D Mercedes Autobahn Motorhome, fully equipped, fridge, shower, etc. 19,000 miles. £8,900.

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1979 733i
Chamonix white, blue cloth interior, central locking, tinted glass, electric windows, radio/cassette [illegible]

1977 633 CSi AUTOMATIC
Polaris metallic silver, black interior, air conditioning, radio/cassette £12,000

1977 528 AUTOMATIC
Reseda metallic green and interior, tinted glass, radio/stereo cassette, air cond., pre-heater, wash/wipe £6,600

1979 518 AUTOMATIC
Biscay blue, blue cloth, tinted glass [illegible]

1976 3.0L AUTOMATIC
Fjord metallic blue, blue cloth interior, tinted glass, radio £4,500

The above are available for lease.
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1978 928 Auto Metallic oak green, beige velour interior, passenger door mirror. 6,000 miles.
1978 911 SC Coupé Manual, black, black leather interior, beige inserts. 3,000 miles.
1978 911 SC Coupé Manual, silver metallic, beige pinstripe interior, front and rear spoilers, 4,000 miles.
1978 911 SC Coupé Sportomatic Arrow blue, 6,000 miles.
1977 911 SC Sport Manual, black, full red tartan interior, 12,000 miles.
1976 911 Lux Coupé Sportomatic Ice blue, full red tartan interior. 21,000 miles.
1979 924 Lux Auto., dolomite grey, 6,000 miles.

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The Three Series Cabriolet Conversion. A full 4 seat convertible. The following right hand drive cars for June delivery.

1978T Cabriolet 323i. Jade green.

1978T Cabriolet 320. Auto., PAS, Met. Ruby.

1978T Cabriolet 316. Golf Yellow.

Please contact Michael Harris for full details on these cars, future cars and the Cabriolet conversion in general.

1979 Series 635. Polaris blue/hide, elec. s/roof and door mirrors, w/wipe, radio/stereo. 7,000 miles.

1978 Alpina 633. Silver/blue velour. Full specification including 240 bhp engine, 5-speed competition box, 7in/8in wheels with P7 tyres, air cond., elec. s/roof, etc. etc. 13,000 miles.

1979 635 Auto. Henna red/walsbeige hide, elec. s/roof & door mirrors, Mahle wheels, w/wipe, spoiler, radio/stereo. 300 miles. £17,450.

1978 (T) 633 Auto. Black/red hide, air cond., twin electric mirrors, w/wipe, radio, stereo. 8,000 miles. £18,800.

1977 633 Auto. Fjord/blue int., elec. s/roof, radio/stereo. 13,000 miles. £13,450.

1977 (Series) 633 Manual. Black/black int., Mahle wheels, radio, etc. 19,000 miles. £12,750.

1978 733i Auto. Kashmir/beige velour, elec. s/roof, windows & mirrors, radio/stereo, alloy wheels. 4,000 miles. £14,650.

1978 733i Auto. Arctic blue/grey velour, elec. windows. 11,000 miles. £12,750.

1979 730 auto. Polaris/blue vel., elec. s/roof, front elec. windows and door mirrors, t/glass, c/locking, radio/stereo. 2,00 miles. £14,250.

1978 730 auto. Turmaline/green vel., elec. s/roof, alloy wheels, t/glass, c/locking, radio/stereo. 9,000 miles. £11,750.

1978 Series 730 Auto. Polaris silver/blue velour, metal s/roof, central locking, radio/stereo. 14,000 miles. £11,450.

1978 Series (T Reg'd.) 728 Auto. Fjord blue/blue velour, elec. s/roof. Alpina wheels. 8,000 miles. £10,950.

1978 728 manual. Kashmir/beige vel., t/glass, c/locking, radio/stereo. 2,000 miles. £10,995.

1978 728 Auto. Fjord/blue velour, elec. s/roof, t/glass, c/locking. 10,000 miles. £10,950

1978 728 Manual. Met. ruby/grey velour, t/glass, c/locking. 9,000 miles. £9,995

1977 3.0 LA. Fjord blue/grey velour, t/glass, radio. 14,000 miles. £7,450.

1978 (Series) 528i Automatic. Amazonite black velour, alloy wheels, t/glass, 19,000 miles. [illegible]

1977 525 Auto. Choice of 2 both metallic and low mileage from £6,995.

1977 (S & R) 525 Manual. Choice met. ruby or met. blue. Both with metal s/roof, t/glass, etc., and low mileage. From £6,650.

1979 (Series) 520/6 Auto. Black/black velour, PAS, metal s/roof, t/glass, radio/stereo. 1,000 miles. £8,350.

1978 T 520/6 Auto. Polaris/blue velour, metal s/roof, t/glas, radio/stereo. 6,000 miles. £7,995.

1978 320/6 Auto. Fjord blue/blue velour, PAS, elec. s/roof, t/glass, radio/stereo. 12,000 miles. £7,895.

1978 (T) 520/6 Manual. Amazonite/black velour, metal s/roof. Alpina wheels, t/glass, radio/stereo. 11,000 miles. £7,795.

1979 323i. Kashmier/beige, metal s/roof, Alpina wheels, LS diff., twin elec. mirrors, radio/stereo, etc. 700 miles. £6,995.

1979 323. Iberian red/black cloth, metal s/roof, Mahle wheels, t/glass, radio/stereo. 4,000 miles. £6,450.

1979 320 Auto. Topaz/beige, metal s/roof, Alpina wheels, radio/stereo. 2,000 miles. £7,450.

1977 (S) 320. Fjord blue/blue cloth, radio/stereo. 5,000 miles. £5,495.

1977 (S & R) 320i. Reseda or Topaz. Both high specification from £5,795.

1977 (S & R) 320 Auto. Choice Reseda, Madeira, Polaris. All very low mileage. From £4,995.

MERCEDES-BENZ

1979 450 SLC. Metallic red/parchment velour, air cond., elec. s/roof, alloy wheels, radio/stereo, etc. Delivery mileage.

1979 450 SLC. Fire engine red/bamboo velour, air cond., alloy wheels, cruise control, LS diff., etc. Del. mileage.

1979 450 SLC. Magnetite blue/blue velour, elec. s/roof, alloy wheels, cruise control. Del. mileage.

1978 450 SLC. Silver green/moss velour, air cond., elec. s/roof, alloy wheels l.s. diff., self-levelling susp., cruise control, radio/stereo, etc 11,000 miles.

1979 450 SEL. Milan brown/parchment hide, air cond., elec. s/roof, alloy wheels, cruise control. Del. mileage. £22,850.

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PORSCHE 928. Silver metallic, automatic, usual comprehensive specification, including stereo and air conditioning, passenger door mirror. £22,750 ono. 01-235

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atehouse Rd., Aylesbury 0296 5941

dt Inc. Tst.	107.5	113.2	+0.3	3.12
apital	39.5	41.8	+0.3	4.36
come	46.3	49.3	+0.2	6.16
v. Tst. Fd.	39.2	41.7	.....	4.75
en. Tst.	53.2	56.6	+0.5	4.12
rog. Tst.	72.0	76.0xd	+0.6	4.40

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& Pref.	99.4	104.6	.....	12.23

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. Fund	74.6	79.6xd	+0.7	5.03
nc.	43.6	46.7	+0.5	4.71
Ind. Dev.	41.0	43.9	+0.5	4.24
pital	81.3	87.0	+0.5	4.37
Fund	123.2	131.8xd	+1.1	5.05
Acc. Fd.	143.9	154.0	+1.5	4.46

Funds

ld Fd.	79.8	85.4	+0.4	7.90
ome	75.0	80.3	+0.6	6.75
. Inc.	44.7	47.8	+0.4	6.76

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onal	24.9	26.6	.....	3.82
and	37.4	40.0	−0.4	2.23
America	52.8	56.5xd	−0.2	2.04

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Co.'s Fd.	48.4	51.8	+0.3	3.76
. Co's Fd.	60.2	64.4	+0.2	3.88
/ Shs.	116.7	124.9xd	+0.8	5.23
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Earnings	66.0	70.6	+0.7	4.11

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Exempt	43.7	45.4xd	−0.5	3.09
Co. Exempt	76.6	80.4	+0.4	4.43
xempt	94.5	98.3	−0.3	2.24

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U.T.	56.9	61.3	.....	4.58

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Do. Accum.	68.2	72.9	+0.8	4.42

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Public Trustee, Kingsway, WC2. 01-405 4300

Capital May 24	112.2	114.8	.....	4.36
Gross Inc. May 24	85.8	87.5	.....	8.23
High Yield May 24	93.3	97.5	.....	8.61

*Unauth. Restricted to monies under Court control.

G.T. Unit Managers Ltd.♥
16 Finsbury Circus, EC2M 7DD 01-628 8131

G.T. Cap. Inc.	106.6	113.3	+1.1	2.70
Do. Acc.	130.7	139.0	+1.3	2.70
G.T. Inc. Fd. Un.	179.8	191.2	+1.4	8.20
G.T. U.S. & Gen.	124.6	132.5	−2.3	3.10
G.T. Japan & Gen.	77.9	82.4	−1.2	2.20
♦Gt. Pens. Ex. Fd.	212.8	223.4	.....	2.90
G.T. Int'l. Fund	151.6	161.2	−2.1	1.70
G.T. Four Yds. Fd.	58.8	62.5xd	.....	7.70
G.T. Far East & Gen.	44.8	48.1xd	.....	2.10

G. & A. Trust (a) (g)
5 Rayleigh Road, Brentwood. (0277) 227300

G. & A.	37.9	40.5xd	+0.3	4.77

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2 St. Mary Axe, EC3A 8BP. 01-623 6114
Dealing only: 01-623 5766/5806

American Tst.	24.2	26.0xd	+0.1	0.39
British Tst. (Acc.)	65.6	70.5	+0.5	3.74
Commodity Share	30.1	32.4xd	+0.2	3.24
Extra Income Tst.	26.2	28.2xd	+0.1	8.85
Far East Trust	33.0	35.5	−0.9	0.15
High Income Tst.	65.6	70.5	+0.1	8.73
Income Fund	84.8	91.2	+0.6	6.74
Ins. Agencies	£15.27	16.23	+0.06	3.98
Intl. Exempt Fd.	101.5	110.0	+0.6	6.02
Intl. Tst. (Acc.)	32.2	34.6	+0.2	0.63

Gibbs (Antony) Unit Tst. Mgs. Ltd. (a)
3 Frederick's Pl., Old Jewry, EC2 01-588 4111

Extra Income	31.9	35.1	.....	9.20
Income	46.0	49.5xd	+0.1	8.50
Accumulation	76.1	82.7	+1.0	4.80
Growth	43.3	47.1xd	+0.6	4.40
Capital	47.0	51.0xd	.....	3.80
Small Co's	46.9	51.0	+0.2	4.80
Technology	70.6	76.7xd	+0.4	4.60
Private	46.0	50.0	+0.7	4.10
Intl. Ems. & Assets	49.0	53.2	.....	2.80
American	22.5	24.2xd	−0.1	2.80
Far East & Gen.	24.3	26.2	−0.1	2.60
Far East Trust	25.3	27.3	−0.2	2.60

Minster Fund Managers Ltd.
Minster Hse., Arthur St., EC4. 01-623 1050

Minster May 21	42.2	44.2	.....	5.71
Exempt May 31	108.7	112.7	.....	5.95

MLA Unit Trust Mngmnt. Ltd.
Old Queen Street, SW1A 9JG. 01-222 8177

MLA Units	55.0	57.8	.....	3.67

Murray Johnstone U.T. Mgmt.♥ (a)
163, Hope Street, Glasgow, G2 2UH. 041-221 5521

MJ European	71.6	76.3	.....	4.51

Dealing Day Friday.

Mutual Unit Trust Managers♥ (a)(g)
15 Copthall Ave., EC2R 7BU. 01-606 4803

Mutual Sec. Plus	56.6	60.0	+0.3	6.73
Mutual Inc. Tst.	77.6	83.0	.....	6.98
Mutual Blue Chip	48.8	52.7	+0.3	6.18
Mutual High Yld.	61.2	66.0	+0.3	8.16

National and Commercial
31, St. Andrew Square, Edinburgh. 031-556 9555.

Income May 23	171.0	177.4	.....	5.65
(Accum. Units)	238.0	246.8	.....	5.65
Capt. May 23	144.4	149.8	.....	3.11
(Accum. Units)	177.8	184.4	.....	3.11

National Provident Inv. Mngrs. Ltd.♥
48, Gracechurch St., EC3P 3HH. 01-623 4200

N.P.I. Gth. Un. Tst.	54.8	58.3xd	.....	4.75
(Accum. Units)*	69.3	73.8	.....	4.75
NPI O'seas. Trust	128.4	135.9	.....	2.40
(Accum. Units)***	139.1	147.2	.....	2.40

*Prices on May 31. Next dealing June 28.

National Westminster♥ (a)
161, Cheapside, EC2V 6EU. 01-606 6060

Capital (Accum.)	75.2	80.8xd	+0.5	3.63
Extra Inc.	69.9	75.1	+0.9	8.18
Financial	37.4	40.2	+0.1	4.85
Growth Inv.	94.6	101.7	+1.0	4.43
Income	38.5	41.3	+0.4	6.68
Portfolio Inv. Fd.	76.7	80.3xd	−1.1	5.63
Universal Fd.	47.2	50.7xd	−0.1	2.82

NEL Trust Managers Ltd.♥ (a)(g)
Milton Court, Dorking, Surrey. 5911

Nelstar	66.3	69.7	+0.4	4.92
Nelstar High Inc.	51.3	53.9	+0.2	8.04

Norwich Union Insurance Group (b)
P.O. Box 4, Norwich, NR1 3NG. 0603 22200

Group Tst. Fd.	411.3	432.9	+2.1	4.70

Pearl Trust Managers Ltd. (a)(g)(z)
252, High Holborn, WC1V 7EB. 01-405 8441

Pearl Growth Fd.	26.9	29.0	+0.3	4.76
Accum Units	33.0	35.5	+0.3	4.76
Pearl Inc.	36.7	39.5	+0.4	6.65

Prudl. Portfolio Mngrs. Ltd.♥ (a)(b)(c)
Holborn Bars, EC1N 2NH. 01-405 9222

Prudential	149.0	158.0	+1.5	4.65

Quilter Management Co. Ltd.♥
The Stock Exchange, EC2N 1HP. 01-600 4177

Quadrant Gen. Fd.	128.0	133.4	.....	3.57
Quadrant Income	147.4	152.0	.....	7.91

Reliance Unit Mgrs. Ltd.♥
Reliance Hse., Tunbridge Wells, Kt. 0892 22271

Opportunity Fd.	72.9	77.9	.....	5.62
Sekforde T. (Acc.)	47.2	50.5	+0.2	5.18
Sekforde T. Inc.	44.3	47.4	+0.1	5.18

Ridgefield Management Ltd.
38-40, Kennedy St., Manchester 061-236 8521

Ridgefield Int. UT	86.0	93.0	.....	2.60
Ridgefield Income	98.0	105.0	.....	8.70

Rothschild Asset Management (g)
72-80, Gatehouse Rd., Aylesbury. 0296 5941

N.C. Equity Fund	184.2	195.9	+2.1	3.58
N.C. Engy. Res. Tst.	118.2	125.7	+0.3	2.38
N.C. Income Fund	162.5	172.8xd	+1.5	7.30
N.C. Intl. Fd. (Inc.)	79.5	84.5	−0.1	1.65
N.C. Intl. Fd. (Acc.)	80.5	86.6	−0.1	1.65
N.C. Smllr Coys Fd.	197.8	210.5	+2.1	3.73

Rowan Unit Trust Mngt. Ltd.♥ (a)
City Gate Hse., Finsbury Sq., EC2. 01-606 1066

American May 31	65.5	69.0	.....	1.40
Securities May 30	205.0	216.0	.....	4.02
High Yield June 1	57.4	60.3xd	−0.2	8.31
(Accum. Units)	86.3	90.7	−0.4	8.31
Merlin May 30	91.2	96.1	.....	3.64
(Accum. Units)	114.9	121.0	.....	3.64

Royal Tst. Can. Fd. Mgrs. Ltd.
48-50, Cannon St., London EC4M 6LD 01-236 6044

Capital Fd.	74.4	78.5	.....	3.31
Income Fd.	74.7	78.8	.....	7.13

Prices at May 31. Next dealing June 15.

Save & Prosper Group♥
4, Great St. Helens, London EC3P 3EP
68-73 Queen St., Edinburgh EH2 4NX
Dealings to: 01-554 8899 or 031-226 7351

International Funds

Capital	36.8	39.5	.....	2.89
I.T.U.	26.8	28.8	.....	3.07
Univ. Growth	67.2	72.2	−0.3	2.82

Increasing Income Fund

High-Yield	57.4	61.7	+0.5	7.45

High Income Funds

High Return	74.4	79.9	+0.6	8.14
Income	45.8	49.2	+0.3	9.49

U.K. Funds

Schlesinger Trust Mngrs. Ltd. (a) (z)
140, South Street, Dorking. (0306) 86441

Am. Exempt	21.5	22.6	.....	4.50
Am. Growth	26.4	28.5	.....	3.01
Am. Smaller Cos.	28.9	31.1	.....	—
Exempt High Yld.	30.1	31.7xd	+0.1	7.88
Exempt Mkt. Ldrs.	30.8	32.4xd	+0.4	3.88
Extra Inc. Tst.	30.9	33.8	+0.1	8.94
Income Dist.	43.6	47.7xd	+0.1	9.22
Inc. 10% Wdrwl.	32.0	35.0xd	+0.1	—
Inv. Tst. Units	29.0	31.2xd	.....	5.00
Intl. Growth	46.9	50.4	.....	3.82
Market Leaders	34.7	37.7xd	+0.4	4.41
"Nil Yield"	30.0	32.4	+0.2	—
Pref. & Gilt Trust	23.6	25.4	.....	12.16
Property Shares	38.8	42.2	+0.3	1.85
Special Sit. Tst.	39.2	42.2	+0.5	1.75
U.K. Grth. Accum.	27.2	29.2xd	+0.2	4.56
U.K. Grth. Dist.	23.1	24.8xd	+0.2	4.54

J. Henry Schroder Wagg & Co. Ltd.♥
120, Cheapside, E.C.2. 01-240 3434

Capital May 29	116.8	121.0xd	.....	2.79
(Accum. Units)	143.6	148.8	.....	2.79
Income May 29	215.2	223.0	.....	7.24
(Accum. Units)	328.9	340.8	.....	7.24
General May 30	101.4	105.6	.....	3.81
(Accum. Units)	128.2	133.5	.....	3.81
Europe May 31	29.1	30.9xd	.....	4.05
(Accum. Units)	32.7	34.7	.....	4.05
*Pn&ChaFd May 30	203.5	209.7	.....	4.03
*Recovery May 1	253.0	260.8	.....	3.99
*Spec. Ex. May 1	326.1	336.1	.....	3.37

*For tax exempt funds only

Scottish Equitable Fnd. Mgrs. Ltd.♥
28 St. Andrews Sq. Edinburgh 031-556 9101

Income Units	56.5	60.1	.....	4.97
Accum. Units	66.9	71.2	.....	4.97

Dealing day Wednesday.

Sebag Unit Tst. Managers Ltd.♥ (a)
PO Box 511, Bcklbry. Hse., E.C.4. 01-236 5000

Sebag Capital Fd.	39.7	41.7	+0.5	3.71
Sebag Income Fd.	33.3	35.0	+0.3	8.00

Security Selection Ltd.
15-19 Lincoln's Inn Fields, WC2. 01-831 6936/9

Unvl Gth Tst Acc.	25.9	27.6	.....	4.39
Unvl Gth Tst Inc.	22.0	23.5	.....	4.39

Stewart Unit Tst. Managers Ltd. (a)
45, Charlotte Sq., Edinburgh. 031-226 3271

†Stewart American Fund

Standard Units	57.2	60.7	.....	1.52
Accum. Units	62.2	66.1	.....	—
Withdrawal Units	44.6	47.4	.....	—

*Stewart British Capital Fund

Standard	159.6	173.0	.....	3.95
Accum. Units	179.5	194.7	.....	3.95

Dealing †Tues. & Fri. *Wed.

Sun Alliance Fund Mngt. Ltd.
Sun Alliance Hse., Horsham. 0403 64141

Exp. Eq. Tst. May 9	£287.3	302.6	.....	3.64
♥The Family Fd.	114.0	121.2	+0.7	3.46

Tower Unit Trust Mngt. Ltd.
39/45 Finsbury Square, EC2A 1PX 01-628 2294

Income & Growth	23.6	25.2	+0.1	7.94

Trades Union Unit Tst. Managers♥
100, Wood Street, E.C.2. 01-628 8011

TUUT June 1	57.0	60.7	−4.1	4.88

Transatlantic and Gen. Secs.♥ (C) (Y)
91-99, New London Rd., Chelmsford. 0245-51651

Barbican May 31	89.2	95.1	.....	5.67
(Accum. Units)	140.4	149.6	.....	5.67
♦Barb. Expt. May 30	77.2	79.3xd	.....	5.41
Buckhm. May 31	88.1	93.5xd	.....	4.06
(Accum. Units)	112.6	119.4	.....	4.06
Colemco June 1	145.2	152.9	−0.1	5.67
(Accum. Units)	182.3	191.9	−0.1	5.67
Cumbl. May 30	59.2	63.5xd	.....	6.54
(Accum. Units)	68.0	72.9	.....	6.54
Glen May 29	57.6	61.2	.....	4.19
(Accum. Units)	76.3	81.1	.....	4.19
Marlboro. May 29	54.8	57.4	.....	2.87
(Accum. Units)	63.9	66.9	.....	2.87
Van. Grwt. May 29	54.1	56.9	.....	3.32
(Accum. Units)	68.0	71.6	.....	3.32
Vann Hy May 29	78.7	83.5	.....	7.93
Vang. T'ee May 30	49.3	51.9	.....	5.74
(Accum. Units)	52.5	55.3	.....	5.74
Wickmr. May 31	70.6	74.9	.....	4.24
(Accum. Units)	86.7	91.8	.....	4.24
Wick-Div. June 1	72.5	77.3xd	−0.8	8.16
Do. Accum.	88.1	93.9	−1.0	8.16

Tyndall Managers Ltd.♥
18, Canynge Road, Bristol. 0272 32241

Income May 30	105.6	111.0	.....	8.59
(Accum. Units)	200.8	211.0	.....	8.59
Capital May 30	144.6	152.0	.....	4.38
(Accum. Units)	207.4	217.8	.....	4.38
Exempt May 30	122.0	128.2	.....	8.03
(Accum. Units)	179.8	188.8	.....	8.03
Int. Earns May 30	272.8	289.2	.....	5.26
(Accum. Units)	314.0	333.0	.....	5.26
Pref. May 30	108.4	115.0	.....	13.12
(Accum. Units)	142.8	151.4	.....	13.12

24, Castle St., Edinburgh. 031 225 1168

Scot Inc. May 30	177.2	188.0	.....	8.93
Scot. Cap. May 30	148.8	157.8	.....	4.92
(Accum. Units)	183.4	194.4	.....	4.92

London Wall Group 0272 32241

Capital Growth	90.9	97.2	+0.6	6.36
Do. Accum.	97.4	104.2	+0.6	6.36
Extra Inc. Growth	39.0	41.9	+0.2	10.44
Do. Accum.	48.7	52.3	+0.2	10.44
Financial Pr'rty	20.3	21.6	+0.2	3.66
Do. Accum.	25.5	27.4	+0.1	3.66
High Inc. Priority	63.2	67.6	+0.3	8.95
International	25.2	26.9	−0.1	3.16
Special Sits.	41.1	44.1	+0.3	4.60

TSB Unit Trusts(y)
21, Chantry Way, Andover, Hants. 0264 62188
Dealings to 0264 63432-3

INSURANCE AND PROPERTY BONDS

OFFSHORE AND OVERSEAS FUNDS

Alexander Fund
37, rue Notre-Dame, Luxembourg.

Alexander Fund		US$7.54	.....	—

Net asset value May 29.

Allen Harvey & Ross Inv. Mgt. (C.I.)
1 Charing Cross, St. Helier, Jsy., C.I. 0534-73741

AHR Gilt Edg. Fd.	£12.16xd	12.17xd	.....	11.23

Arbuthnot Securities (C.I.) Limited
P.O. Box 284, St. Helier, Jersey. 0534 76077

Cap. Tst. (Jersey)	121	125xd	.....	8.00

Next dealing June 4.

Gov't Secs. Tst.	96.5	100.0	.....	12.50

Next dealing June 4.

East &Intl. Tst. (C.I.)	101	108	.....	3.47

Next dealing date June 14.

Australian Selection Fund NV
Market Opportunities, c/o Irish Young & Outhwaite, 127 Kent St., Sydney

US$1 Shares		$US1.48	.....	—

Net asset value November 24.

Bank of America International S.A.
35 Boulevard Royal, Luxembourg G.D.

Wldinvest Income	111.58	112.14	+0.13	8.25

Prices at May 31. Next sub. day June 6.

Banque Bruxelles Lambert
2, Rue De la Regence B 1000 Brussels

Renta Fund	US$57.39	59.18	+0.22	7.96

Barbican Managers (Jersey) Ltd.
P.O. Box 63, St. Helier, Jersey 0534 74806

Barb. Int. Fund	90.0	95.0	.....	3.75

Barclays Unicorn International
1, Charing Cross, St. Helier, Jersey. 0534 73741

Overseas Income	48.8	51.3	−0.2	12.0
Unidollar Trust	US$11.49	12.18	−0.05	1.65
Unibond Trust	US$97.53	98.45xd	.....	9.00

1, Thomas St., Douglas, Isle o.Man. 0624 4856

Unicorn Aust. Ext.	46.0	49.5	.....	1.80
Do. Aust. Min.	33.2	35.8xd	.....	1.70
Do. Grtr. Pacific	73.5	79.1	.....	—
Do. Intl. Income	40.5	43.6	.....	8.00
Do. Isle of Man Tst.	48.0	51.6	−1.0	8.70
Do. Manx Mutual	28.5	30.7	.....	1.60

Bishopsgate Commodity Ser. Ltd.
P.O. Box 42, Douglas, I.o.M. 0624-23911

ARMAC *May 8	$US40.67	43.24	.....	—
CANHRHO **May 8	£1.182	1.253	.....	—
COUNT ***May 8	£3.011	3.194	.....	1.64

Originally issued at *$10 and **£1. Next val. June 4.

Bishopsgate Progressive—Ldn. Agents

Kemp-Gee Management, Jersey Ltd.
1 Charing Cross, St. Helier, Jersey. 0534 73741

Capital Fund	115.8	119.4	.....	—
Income Fund	67.2	69.3xd	.....	9.84
Gilt Bond	£1,015	1,069	.....	—

Keyser Ullmann Ltd.
25, Milk Street, EC2V 8JE. 01-606 7070

Fonselex	Fr1,337	1,470	.....	2.40
Bondselex	Fr130.00	125.95	.....	2.40
Cent. Assets	£146.20	146.26	+0.05	—

King & Shaxson Mngrs.
1, Charing Cross, St. Helier, Jersey. (0534) 73741
Valley Hse., St. Peter Port, Grnsy. (0481) 24706
1 Thomas Street, Douglas, I.O.M. (0624) 4856

Gilt Fund (Jersey)	9.71	9.74	.....	11.50
Gilt Trust (I.o.M.)	108.5	111.6xd	.....	11.50
Gilt Fnd. Guernsey	10.18	10.22	.....	11.50

Intl. Govt. Secs. Tst.

First Sterling	£19.16	19.23	.....	—
First Intl.	$US211.10	211.59	.....	—

Kleinwort Benson Limited
20, Fenchurch St., EC3. 01-623 8000

Eurinvest. Lux. F.		1,097	.....	4.38
Guernsey Inc.	70.9	75.1	.....	2.98
Do. Accum.	90.2	95.5	.....	2.98
KB Far East Fd.		US$13.19xd	.....	2.27
KB Gilt Fund	£11.31	11.39	.....	10.93
KB Intl. Fund		US$12.38	.....	2.26
KB Japan Fund		US$32.29	.....	0.92
K.B. U.S. Gwth. Fd.		US$13.35	.....	1.50
Signet Bermuda		US$5.26	.....	1.72
K.B. Int. Bd. Fd.		$104.40	.....	—

Lloyds Bk. (C.I.) U/T Mgrs.
P.O. Box 195, St. Helier, Jersey. 0534 27561

Lloyds Tst. O'seas.	53.6	56.4	.....	2.26

Next dealing June 15.

Lloyds Trust Gilt	£10.38	10.39	.....	11.50

Next dealing June 6.

Lloyds Bank International, Geneva
P.O. Box 438, 1211 Geneve 11 (Switzerland)

Lloyds Int. Growth	SF337.0	360.5	.....	1.20
Lloyds Int. Income	SF294.50	306.00	.....	5.20

M & G Group
Three Quays, Tower Hill EC3R 6BQ. 01-626 4588

Atlantic May 29	US$3.32	3.63	.....	—
Aus. Ex. May 30	US$2.52	2.84	.....	—
Gold Ex. Acc.	US$14.58	16.36	.....	—
Island	145.8	155.2	.....	13.28
(Accum Units)	212.2	225.8	.....	13.28

Samuel Montagu Ldn. Agents
114, Old Broad St., EC2. 01-588 6464

CIG

IBM COMPUTERS

LEASED AT SUBSTANTIAL SAVINGS

CIG COMPUTERS LIMITED,
56/70 Putney High Street,
London SW15 1SF, England.
Tel: 01-788 8212

FT SHARE INFORMATION SERVICE

BRITISH FUNDS

Interest Due		Stock	Price £	Last xd	Yield Int.	Yield Red.
"Shorts" (Lives up to Five Years)						
17M	17S	Treasury 3pc '79‡‡	98⅛	8.2	3.06	9.59
26M	26S	Electric 4¼pc '74-79	98⅝	19.2	4.32	9.47
1M	1N	Treasury 10½pc '79‡‡	99⅞	26.3	10.53	11.08
15M	15N	Electric 3½pc '76-79	97½	9.4	3.59	9.25
3M	3S	Treasury 9pc 1980‡‡	98⅜	25.1	9.15	11.19
14N	14M	Treasury 9½pc '80‡‡	98⅜	9.4	9.66	11.30
15O	15J	Treasury 3½pc '77-80	96⅝	9.5	3.62	6.94
15D	15J	Funding 5¼pc '78-80‡‡	97¼xd	9.5	5.41	8.21
25M	25N	Exchequer 13pc 1980‡‡	102⅞	18.4	12.70	11.16
15J	15Ja	Treasury 11½pc 1981‡‡	100¼	11.12	11.42	10.99
15F	15A	Treasury 3¼pc 1979-81	92⅞	9.1	3.77	8.05
1O	1A	Treasury 9¾pc 1981‡‡	97⅞	23.3	9.96	11.01
12D	12J	Exch. 8¼pc 1981	95⅜xd	8.5	8.60	10.52
4F	4A	Exch. 9½pc 1981	96⅞	29.12	9.80	11.12
21F	21A	Exch. 3pc 1981	89⅝	25.1	3.36	8.35
17M	17N	Treas. Variable '81§§	97¾	10.4	12.23	13.04
23M	23N	Exch. 12¾pc 1981‡‡	103¼	17.4	12.35	11.17
15J	15Ja	Treas. 8½pc '80-82‡‡	94½	11.12	8.99	10.95
15A	15F	Treasury 3pc '82‡‡	86½	9.1	3.47	8.70
16S	16M	Treasury 14pc '82‡‡	106¼	7.2	13.18	11.27
15D	15J	Treas. Variable '82§§	96¾xd	9.5	12.60	13.29
5J	5Ju	Treasury 8¼pc '82	93⅜xd	1.12	8.84	10.87
22M	22S	Exch. 9¼pc 1982	94⅝	13.2	9.78	11.22
5Ju	5J	Exch. 8¾pc 1983	93⅝xd	1.12	9.35	10.95
21A	21F	Exch 3pc '83	83	15.1	3.62	8.41
17S	17M	Treasury 12pc 1983‡‡	101⅜	8.2	11.82	11.44
17S	17M	Treas. 12pc '83 A‡‡	101¼	—	11.85	11.54
—		Treas. Variable '83 §§	94¾	17.4	12.62	13.70
18J	18Ju	Treasury 9¾pc '83	94⅞	12.12	9.78	10.92
12J	12D	Exch. 10pc 1983	95⅜xd	8.5	10.42	11.17
15J	15Ja	Funding 5½pc '82-84‡‡	86¾	11.12	6.34	9.07
Five to Fifteen Years						
22M	22N	Exch. 12¼pc 1985	102	17.4	12.06	11.88
10J	10Ju	Treasury 8½pc '84-86‡‡	91⅝	4.12	9.63	10.92
—		Exch. 13¼pc 1987	108¾	—	12.54	12.07
1N	1M	Funding 6½pc '85-87‡‡	80¾	26.3	8.11	10.16
26J	26Ja	Treasury 7¾pc '85-88‡‡	84⅞	20.12	9.44	11.00
1J	1Ju	Transport 3pc '78-88	64⅞xd	25.5	4.61	8.62
15A	15O	Treasury 5pc '86-89	69⅜	9.3	7.23	9.79
15J	15Ja	Treasury 13pc 1990‡‡	109¾	11.12	12.41	12.17
15D	15J	Treasury 8¼ 87 90‡‡	81⅞xd	9.5	10.05	11.10
10J	10Ja	Treasury 11¾pc 1991	102	4.12	12.07	12.18
5O	5A	Funding 5¾pc '87-91‡‡	69½	1.3	8.39	10.43
—		Exch. 11pc 1991 £45pd	41½	—	11.77	12.03
22J	22Ja	Treasury 12¾pc '92‡‡	107¾	18.12	12.37	12.25
21A	21F	Treasury 10pc 1992	90½	15.1	11.41	11.89
25F	25A	Exch. 12¼pc '92	103½	19.1	12.25	12.22
14J	14Ju	Treasury 12½pc '93‡‡	106½	8.12	12.29	12.25
15M	15S	Funding 6pc 1993‡‡	66	6.2	9.28	10.94
23M	23N	Treasury 13¾pc 1993‡‡	109¼	17.4	12.58	12.34
1M	1S	Treasury 14½pc '94‡‡	117½	23.1	12.75	12.43
Over Fifteen Years						
22F	22A	Exch. 12½pc 1994	104¾	15.1	12.35	12.31
17M	17N	Treasury 9pc '94‡‡	81¼	10.4	11.07	11.63
25Ju	25Ja	Treasury 12pc '95	102⅝	19.12	12.20	12.23
1N	1M	Gas 3pc '90/95	49⅛	26.3	6.14	9.17
21Ja	21J	Exch. 10¼pc 1995	91½	15.12	11.68	11.98
15M	15N	Treasury 12¾pc '95‡‡	104¼	9.4	12.31	12.23
15S	15M	Treasury 9pc '92/96‡‡	81⅞	6.2	11.27	11.76
3N	3M	Treasury 15¼pc '96‡‡	120	27.3	12.85	12.55
15N	15M	Exchequer 13¼pc '96‡‡	107⅜	9.4	12.42	12.30
1A	1O	Redemption 3pc 1986-96	47⅞	23.2	6.34	9.09
22J	22Ja	Treasury 13¾pc '97‡‡	111½	18.12	12.47	12.35
21A	21F	Exchequer 10½pc 1997	91⅝	15.1	11.84	12.05
1M	1S	Treasury 8¾pc 1997‡‡	79⅞	15.1	11.28	11.74
1N	1M	Treasury 6¾pc '95-98‡‡	64⅝	26.3	10.55	11.43
30M	30S	Treas. 15½pc '98‡‡	124⅛	21.2	12.78	12.52
20M	20N	Exch. 12pc 1998	99⅛	17.5	12.17	12.18
15J	15Ja	Treasury 9½pc 1999‡‡	86⅛	11.12	11.52	11.81
26S	26M	Exch. 12¼pc 1999	101½	—	12.27	12.27
19N	19M	Treasury 10½pc 1999	88⅞	12.4	11.88	12.04
22J	22Ja	Exch. 12pc '99-02	102⅝	19.12	12.21	12.22
25J	25J	Treas. 13¾pc 2000-03	113¼	—	12.45	12.35
19S	19M	Treasury 11½pc '01-04‡	95¼	—	12.12	12.16
14J	14Ju	Funding 3½pc '99-04	40¼	8.12	9.00	10.39
21M	21N	Treasury 12½pc '03-05	102¾	17.4	12.22	12.20
5A	5O	Treasury 8pc '02-06‡‡	71½	1.3	11.40	11.62
10M	10S	Treasury 5½pc '08-12‡‡	50⅝	1.2	11.09	11.38
26J	26Ja	Treasury 7¾pc '12-15‡‡	70½	20.12	11.50	11.60
12J	12D	Exch. 12pc '13-'17	99⅝xd	8.5	12.04	12.05
Undated						
1F	1A	Consols 4pc	34⅝	27.12	12.11	—
1J	1D	War Loan 3½pc‡‡	32¼xd	25.4	10.90	—
1A	1O	Conv. 3½pc '61 Aft.	36¼	23.2	9.69	—
5A	5O	Treasury 3pc 66 Aft	25¼	1.3	12.12	—
5Ja.A.Ju.O.		Consols 2½pc	22½xd	1.3	11.19	—
1A	1O	Treasury 2½pc	21⅛	23.2	12.08	—

INTERNATIONAL BANK

15F	15A	5pc Stock '77-82	84½	16.1	5.92	10.83

CORPORATION LOANS

1F	1A	Birm'ham 9¾pc '79-81	95½	2.1	9.69	11.61
1My	1N	Bristol 7¾pc '79-81	91¾	13.10	8.45	11.71
25M	25N	G.L.C. 12½pc '82	102¼	25.10	12.22	11.57
10F	10Aug.	Do. 12½pc 1983	101½	10.1	12.32	12.02
15My	11N	Glasgow 9¼pc '80-82	93	19.10	9.95	11.78
22M	22N	Herts. 5¼pc '78-80	94¾	23.10	5.54	11.02
15M	15N	Liverpool 9¾pc '80-84	92½	17.4	10.54	11.77
1J.A.J.O.		Do. 3½pc Irred.	28½	1.12	12.72	—
15J	15J	Lon.Co.6½pc '80-82	86¾	15.12	7.50	11.67
1A	1O	Do. 9¼pc '84-85	93½	1.3	10.05	11.01
15M	15S	L.C.C. 5½pc '77-81	88¼	15.2	6.23	11.43
15J	15J	Do. 5½pc '82-84	81¼	15.12	6.90	10.74
11J	11D	Do. 5½pc '85-87	69¼xd	11.5	7.87	11.28
10J	10J	Do 6¾pc '88-90	71½	11.12	9.80	11.85
1M.J.S.D.		Do. 3pc '20 Aft.	24¼	1.5	12.55	—
15M	15S	Middx. 5¼pc 1980	95¼	15.2	5.51	11.55
10Mr.	10S.	Newcastle 9¾pc '78-80	96⅞	9.2	9.55	11.86
15M	15N	Warwick 12½% 1980	100¼	18.10	12.41	11.81

COMMONWEALTH & AFRICAN LOANS

1J	1J	Aust. 5½pc '77-80	96¼xd	31.5	5.68	11.35
1A	1O	Do. 5½pc '81-82	86¾	28.2	6.40	11.46
28F	28A	N.Z. 6pc '76-80	97⅝	29.1	6.24	11.50
15J	15D	Do. 7½pc '83-86	79¾	15.5	9.37	11.72
1M	1N	Sth. Africa 9½pc '79-81	92½	26.3	10.36	13.55
1A	1O	Sth. Rhod. 2½pc '65-70	83	3.66	—	—
15J	15J	Do. 6pc '78-81	121	12.65	—	—

LOANS

Public Board and Ind.

1J	1J	Agric. Mt. 5pc '59-89	63xd	1.12	7.88	11.10
30J	31D	Alcan 10½pc '89-94	84½xd	21.5	12.42	12.80
1M	1S	Met. Wtr. 3pc 'B'	29	1.2	10.62	12.47
30J	31D	U.S.M.C. 9pc 1982	120xd	21.5	7.50	—
30J	31D	Do. without Warrants	90xd	21.5	10.00	12.90

Financial

30J	30J	FFI 13pc 1981	101¾	2.1	12.78	11.77
15M	15N	Do. 14pc '79	100½	9.4	14.19	—
20J	20D	Do. 14pc '83	106	20.11	15.21	12.23
31 Mr	30 S	ICFC 5½pc Deb. '80-82	85	12.2	6.56	11.20
31My	30N	Do. 6¾pc Db. '81-84	78xd	3.4	8.01	11.80
11J	11J	Do. 10½pc Uns.Ln. '86	97½	11.12	11.25	12.00
11J	11J	Do. 11pc Uns.Ln. '88	97½	11.12	11.81	12.20
11J	11J	Do. 11¾pc Uns.Ln. '90	100½	11.12	12.28	12.50
30 Je	31 D	Do. 7¾pcADeb. '89-92	70	27.11	10.39	11.80
31Mr	30S	Do. 7¾pcA Db. '91-94	66	12.2	11.24	12.50
31Mr30S		Do. 9pc 'A' '91-94	79	12.2	11.69	12.40
28F	31A	Do. 8¾pc Ln. '92-97	76	29.1	12.16	12.60

FOREIGN BONDS & RAILS

Interest Due		Stock	Price £	Last xd	Div % Gross	Red. Yield
—		Antofagasta Rly.	22	8.71	—	—
1J	1J	Do. 5pc Pref.	40	13.11	—	—
1J	1J	Chilean Mixed	98	2.10	—	f3.10
—		Chinese 4½pc 1898	25	—	—	—
—		Do. 5pc 1912	26	—	—	—
—		Do. 5pc 1925 Boxer	13½	—	—	—
1J	1D	German Yng. 4½pc	430	4.12	4½	—
1M	1N	Greek 7pc Ass.	46xd	1.5	3½	f7.61
1F	1A	Do 6pc 28 Stab. Ass.	45	1.12	6	f6.82
1A	1O	Do 4pc Mixed Ass.	40	2.1	4	f5.19
May 1		Hung. '24 Ass	52xd	2.5	—	5.10
30J	31D	Iceland 6½pc '83-88	68	27.11	—	13.05
10J	10J	Ireland 7½pc '81-83	88	11.12	7½	12.19
1M	1S	Do 9¾pc '91-96	85	15.2	9¾	12.16
1J	1D	Japan 4pc '10 Ass	280	1.12	—	—
30J	31D	Do 6pc '83-88	73	2.1	6.00	10.80
1A	1O	Peru Ass.3pc	160	2.10	3	1.87
30J	31D	S.G.I. 6½pc 1980	75p	2.1	6½	8.67
May 1		Turin 9pc 1991	$94½	2.5	9	9.53
15A	15O	Turin 6½pc 1984	DM91	16.10	6½	8.45
1F.M.A.N.		Uruguay 3½pc	97	1.11	3½	3.80

U.S. $ & DM prices exclude Inv. $ premium

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FINANCIAL TIMES

PUBLISHED IN LONDON & FRANKFURT

Head Office: The Financial Times Limited, Bracken House, 10, Cannon Street, London EC4P 4BY
Telex: Editorial 886341/2, 883897. Advertisements: 885033. Telegrams: Finantimo, London.
Telephone: 01-248 8000.
Frankfurt Office: The Financial Times (Europe) Ltd., Frankenallee 68-72, 6000 Frankfurt-am-Main 1.
Telex: Editorial 416052. Commercial 416193. Telephone: Editorial 7598 234. Commercial 7598 1.
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INDUSTRIALS—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
—	Hawtin 5p	25½xd	21.5	0.25	6.7	2.4	7.0
June	Hay (Norman) 10p	58	23.4	3.7	1.8	9.5	8.8
July	Hay's Wharf £1	166	27.11	†5.52	2.7	5.0	9.9
June	Hensher 'A' 10p	42	13.11	d1.1	6.3	2.5	6.1
Nov.	Hepworth Cramc.	116	9.4	3.68	3.6	4.7	7.9
June	Hestair	49xd	21.5	3.5	—	10.9	—
	Hewitt (J.) 5p	44	26.3	1.28	6.3	4.5	4.6
July	Highgate & Job 50p	57	26.6	†2.54	2.4	†	9.5
Nov.	Hill (Chas.) £1	87xd	21.5	2.0	—	3.4	—
Apr.	Hirst Mal'son 20p	42	26.2	†2.6	3.6	9.2	4.3
July	Holden (A.)	87	27.11	g3.62	3.9	6.2	6.9
Sept.	Hollis Bros	71	15.1	†4.56	1.8	9.6	8.6
July	Holt Lloyd Int. 10p	208	16.10	7.74	ϕ	5.7	ϕ
Sept.	Hoover 'A'	188	12.3	12.0	1.1	9.5	13.0
July	Hoskins & H 20p	145	8.5	10.39	1.4	10.7	9.0
Oct.	Howard Tenens	45	11.12	1.91	1.9	6.4	10.4
July	Hunting Assoc.	235	16.10	2.44	11.4	1.6	6.7
Nov.	Huntleigh 10p	72	23.4	0.76	6.5	1.6	13.1
mber	Hutch Whamp $HK1	52	15.5	Q23c	2.5	4.2	9.5
July	Hyman (I. & J.) 5p	26½	8.5	d0.96	3.6	5.4	7.2
—	††IAS Cargo Air	121	—	Pd2.8	2.5	3.5	(13.4)
	Do. 6% Cnv. Pref.	170	—	6.0%	11.2	5.3	—
O.Ja.	I.C. Industries$1	£15⅜	12.12	Q51.52	—	5.0	—
Feb.	ICL £1	475	2.1	†8.29	7.4	2.6	5.6
Sept.	Imp. Cont. Gas £1	498	29.1	g9.96	3.3	3.0	11.6
Nov.	Ingall Inds. 10p	31	9.4	†1.87	1.6	9.0	10.3
Aug.	Initial Services	131	2.1	§5.06	2.8	5.8	8.8
June	Inter-City 20p	23½	30.10	1.17	4.0	7.6	4.0
ust	Jacksons Bourne	142	24.7	t¢2.0	4.4	2.1	16.3
April	James (John)	55#	26.2	†d2.76	2.8	7.5	5.4
Jan.	James (M.) Inds. 20p	18½	27.11	d1.02	1.3	8.2	13.7
June	Jardine M. $HK6	135	25.4	Q71c	2.2	5.1	9.0
Dec.	Jentique	31½	26.2	†2.22	1.4	10.5	9.8
—	Johnson & Barnes	11	1175	—	—	—	—
Apr.	Johnson Clnrs.	144	26.3	5.06	3.7	5.2	5.8
Aug.	Johnson Mthy. £1	242	29.1	t8.5	3.4	5.4	12.4
June	Jourdan (T.) 10p	46	9.4	3.22	1.1	10.5	(12.8)
Dec.	Kalamazoo 10p	63½	23.4	†2.16	3.8	5.1	16.1
July	Kelsey Inds.	155	11.12	†3.61	7.5	3.5	5.7
April	Kennedy Sm. 10p	45	12.2	H1.77	3.1	5.9	9.1
April	Kershaw (A.) 5p	£11¾	26.2	23.25	2.0	3.0	(28.2)
Aug.	Kleen-E-Ze Hldgs.	69	11.12	d4.33	2.2	9.4	7.3
Aug.	L.C.P. Hlds	121	27.11	†4.86	2.4	6.0	8.3
Aug.	L.K. Ind'l. Invs.	37xd	21.5	d2.9	1.6	11.7	(6.7)
April	L.R.C. Int. 10p	30½	12.2	2.23	1.6	11.1	7.6
July	Lawtex	60	26.3	†3.22	5.2	8.0	2.6
Nov.	Lead Inds. 50p	184	8.5	8.23	3.1	6.7	6.1
Aug.	Leadenhall Sterling	195	23.4	5.66	ϕ	4.3	ϕ
May	Le Bas (Ed)	59	18.9	1.84	7.5	4.7	3.6
une	Lebolf Fobel 10p	42½	2.1	†1.79	3.6	6.3	5.6
—	Lebus Harris	35	278	—	—	—	—
Oct.	Lep Group 10p	280	2.1	M12.5	8.6	6.7	8.2
July	Lesney Prods. 5p	56xd	21.5	3.24	ϕ	8.6	ϕ
Sept.	Letraset 10p	154	2.1	H6.49	3.6	6.3	9.4
—	Liden 10p	8#	375	ϕ	—	—	—
Nov.	Lindsay & Wms.	120#	30.10	†3.05	3.7	3.8	8.9
Mar.	Lindustries	146	12.2	†9.14	2.1	9.3	6.2
Feb.	Lon. & Nthn. Grp.	41½xd	21.5	3.35	ϕ	12.0	ϕ
June	Long Hambly 10p	14½	8.5	†t0.4	6.5	4.1	4.0
Oct.	Longton Trans.	85	12.2	†d3.86	3.1	6.8	5.4
Apr.	Lonsdale Univsl.	78	12.2	h4.14	2.6	7.9	5.6
June	Low & Bonar 50p	198	9.4	12.16	2.4	9.2	5.6
Dec.	M.Y. Dart 10p	51	8.5	d2.43	3.0	7.1	5.9
Sept.	M'c'rthy Ph. 20p	163	26.2	4.40	4.9	4.0	5.5
May	Macfarlane Gp.	79	9.4	b3.43	2.4	6.5	9.7
Nov.	McCleery L'A	16½	9.4	0.5	3.5	4.5	(7.1)
Nov.	MacLellan (P. & W.)	27	8.5	1.32	6.7	7.3	30.1
Mar.	Macpherson (D.)	117	26.2	H4.0	5.5	5.1	5.3
—	††Maddock	10	21.5	—	—	—	—
Apr.	Magnolia Group	230	23.4	d3.47	9.4	2.3	6.1
Apr.	Man. Ship Can. £1	322	26.2	15.80	1.3	7.3	15.5
Oct.	Marling Ind. 10p	61	11.12	†d1.04	4.2	2.5	13.9
Jan.	Marshall L'xy. 'A'	50	21.8	d2.78	ϕ	8.5	ϕ
July	Marshall's Univ	134xd	21.5	5.95	3.7	6.6	4.7
May	Martin-Black	40	8.5	2.0	7.2	7.5	(15.0)

INSURANCE—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Jan. July	Gen. Accident	234xd	21.5	9.04	—	5.8	—
Jan. May	G.R.E.	252	23.4	11.6	—	6.9	—
July Dec.	Hambro Life	640	23.4	23.8	—	5.6	—
Jan. July	Heath (C.E.) 20p	213xd	21.5	5.42	ϕ	3.8	ϕ
Oct. Mar.	Hogg Robinson	126	15.1	†h4.18	3.1	4.9	9.8
Oct. Apr.	Howden (A.) 10p	89	9.4	7.0	1.6	11.7	7.5
Dec. June	Legal & Gen. 5p	174	9.4	6.51	—	5.6	—
Nov. May	Lon. & Man. 5p	136	8.5	7.24	—	7.9	—
Oct. Apr.	London United 20p	168	8.5	5.31	4.2	4.7	7.5
Nov. July	Matthew Wr. 20p	210xd	21.5	11.05	2.4	7.9	7.1
Nov. June	Minet Hldgs. 20p	136	8.5	3.72	3.9	4.1	8.4
Mar. Aug.	Moran (Chris) 20p	37	11.12	†3.62	1.4	14.6	7.2
Oct. June	Pearl 5p	266xd	21.5	14.05	—	7.9	—
Dec. June	Phoenix	252	8.5	11.56	—	6.8	—
Dec. May	Provident	150	23.4	9.12	—	9.1	—
Nov. May	Prudential	174	9.4	8.06	—	6.9	—
Nov. May	Refuge 5p	158	26.3	9.2	—	8.7	—
Jan. May	Royal	382	26.3	18.77	—	7.3	—
Feb. Oct.	Sedg Forbes 10p	101	29.1	T5.0	2.1	7.4	9.4
Oct. Apr.	Stenhouse	90	26.2	4.52	2.5	7.5	6.6
Jan. July	Sun Alliance £1	580xd	21.5	22.5	—	5.8	—
June Dec.	Sun Life 5p	134	23.4	†3.48	—	3.9	—
April	Taisho Mar. EDR	651	25.3	g010%	—	0.2	—
Nov. May	Trade Indemnity	215	9.4	9.38	—	6.5	—
Ma.Ju.Se.De.	Travelers $2.50	£21⅞	29.1	Q$1.68	—	4.0	—
Dec. June	Willis Faber	240	23.4	10.05	2.2	6.2	11.1

LEISURE

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
July Nov.	Anglia TV 'A'	89	12.3	h3.14	4.0	5.3	7.1
Sept. Feb.	Assoc. Leisure 5p	95½	11.12	†3.07	3.5	4.8	7.4
Dec. June	Barr & W.A.T. 'A'	147xd	21.5	3.5	ϕ	3.6	ϕ
Jan. July	Black Edgtn. 50p	80xd	21.5	d4.99	1.6	9.3	8.8
Nov. June	Boosey & Hawkes	196	23.4	5.67	2.5	4.3	12.5
Mar. Nov.	Campari Int. 20p	123	12.3	†2.0	9.2	2.4	4.6
Apr. Nov.	Coral Leis. 10p	118	25.4	6.7	2.8	8.5	8.7
Jan. June	Grampian 'A' 10p	48xd	21.5	2.44	ϕ	7.6	ϕ
May Oct.	HTV Non/Vtg.	154	2.10	†9.0	2.0	8.9	8.5
June Dec.	Hawley Leisure 5p	30xd	21.5	0.1	ϕ	0.5	ϕ
Oct. Apr.	Highgate Opt. 10p	24	18.9	1.8	ϕ	12.2	ϕ
May Oct.	Horizon 5p	230	23.4	5.64	4.6	3.7	8.8
January	H'w'rd Wy'd 20p	17xd	21.5	†h0.62	3.8	5.4	4.9
Dec. June	LWT "A"	170	9.4	†9.28	1.9	8.2	9.6
June Jan.	Mngmt. Ag. M. 10p	177	2.1	§6.89	3.5	5.9	6.8
Apr. Dec.	Medminster 10p	39	13.11	†2.03	2.1	7.9	9.1
—	Nationwide 5p	10	—	h0.15	2.9	2.2	23.0
Jan. Sept.	Norton & Wrt. 10p	153	2.1	†dh2.12	3.8	2.1	18.7
Jan June	Photax (Lon.)	45	8.5	d3.03	2.0	10.0	7.5
Oct April	Pleasurama 5p	146	26.2	†2.4	7.2	2.5	8.4
Jan July	Rediff. TV Pref. £1	71	2.1	5.95	27.4	12.5	—
Apr. Nov.	Saga Holidays	169	26.3	g6.75	2.5	6.0	10.1
May Dec.	Samuelson 20p	220	11.12	†8.39	1.6	5.8	16.0
Dec May	Scott. TV 'A' 10p	88	23.4	2.63	8.0	4.5	4.2
Oct Apr	Trid'nt TV 'A' 10p	64	12.2	3.16	2.8	7.4	7.1
Jan July	Ulster TV 'A'	94xd	21.5	†4.3	ϕ	6.8	ϕ
April Sept	Webb (Jos.) 5p	18	26.2	hd0.45	4.2	3.7	8.7
Dec June	Westward TV 10p	31xd	21.5	†1.84	1.7	8.9	9.7
November	Zetters 5p	71	18.9	1.3	7.1	2.7	7.7

MOTORS, AIRCRAFT TRADES

Motors and Cycles

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
—	B.L. 50p	25½	—	—	—	—	—
Mr.Je.S.D.	Gen. Mts. Units	167	13.11	Q27.5c	2.0	8.4	5.4
—	Lotus Car 10p	43	675	—	—	—	9.1
—	Reliant Mtr. 5p	10¾	775	—	—	—	8.2
Sept. May	Rolls-Royce Mtrs.	86	26.3	5.23	2.7	9.1	5.3
May	Volvo Kr50	£10¾	21.5	Q14%	ϕ	8.3	ϕ

Commercial Vehicles

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Feb. Aug.	E.R.F. (Hldgs.)	123	15.1	†2.46	12.8	3.0	2.7
August	Foden's (50p)	52	—	3.35	6.2	9.6	(7.9)

PROPERTY—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Jan. Aug.	Evans Leeds	107	27.11	d1.32	3.6	1.8	22.9
Apr. Dec.	Fairview Ests. 10p	190	26.3	†6.31	4.3	5.0	5.1
July	Finance & Ind. 10p	21	26.6	1.1	2.1	7.8	9.1
Feb. Sept.	Gt. Portland 50p	294	11.12	†t2.95	2.4	1.5	41.4
Jan. Apr.	Green (R.) 10p	51	26.3	†d1.49	2.0	4.4	17.3
—	Greencoat 5p	12½	1275	—	—	—	28.4
	Greycoat Ests. 10p	105	—	—	—	—	106.3
June	Hammerson 'A'	850	8.5	6.1	1.9	1.1	73.6
November	Harley Ind. Tst. & 20p	40	27.11	0.67	3.2	2.5	(14.8)
Feb. Oct.	Haslemere 10p	324	2.1	t4.32	2.3	2.0	33.1
Sept. Mar.	HK Land. HK$5	83½	13.11	h039.1	ϕ	4.4	ϕ
Mar. Sept.	Imry Property	660	29.1	†2.2	1.8	0.5	164.8
August	Jermyn Invest.	65	26.6	1.62	1.1	3.7	36.4
May Nov.	Kent (M.P.) 10p	67	23.4	†2.26	3.9	4.5	5.5
—	Laing Props. 'A'	162xd	21.5	3.0	ϕ	2.8	ϕ
July Oct.	Land Invest.	53	18.9	d1.0	1.1	2.8	46.8
Dec. July	Land Secs. 50p	312	27.11	6.5	q1.1	3.2	39.1
Mar. Sept.	Do. 5⅜pc Cnv. '85	£241	26.2	Q5⅜%	q5.7	†2.5	—
Mar. Sept.	Do. 6¼% Conv. '85	£203	26.2	Q6¼%	q5.7	†3.1	—
Mar. Sept.	Do. 10% Conv. '95	£186	26.2	Q10%	q5.7	†5.4	—
July Nov.	Law Land 20p	70xd	21.5	1.1	ϕ	2.3	ϕ
Oct. Mar.	Lend Lease 50c	166	14.2	Q25%	1.9	4.3	12.2
Dec. June	Lon Prov Shp 10p	252xd	21.5	t0.91	3.9	0.5	57.0
Apr. Dec.	Lon. Shop Prop	97	12.3	†3.03	1.0	4.7	33.5
Apr. Sept.	Lynton Hdgs. 20p	159	12.2	2.52	2.2	2.4	28.2
Dec. June	MEPC	178	15.1	§4.75	1.2	4.1	28.7
—	Marlborough 5p	35xd	21.5	0.19	ϕ	0.8	ϕ
—	Marler Estates	39½	874	—	—	—	49.8
—	McInerney 10p	30	10.7	Z2.03	2.0	9.5	5.2
Mar. Oct.	McKay Secs. 20p	120	12.2	H0.7	5.3	0.9	40.5
—	Midhurst Inv. 10p	48	475	—	—	—	—
April Aug.	Mountview 5p	140	11.12	†1.34	6.9	1.4	15.2
Jan. July	Muckiow (A. & J.)	136xd	21.5	†2.48	2.6	2.7	18.1
Apr. Oct.	Nolton	52	26.2	2.03	2.5	5.8	(8.1)
—	North Brit. Props.	114	—	b2.0	1.9	1.8	38.7
June Jan.	Peachey	128	9.4	2.0	2.1	2.3	30.4
Jan. July	Prop. Hldg. & Inv.	390	2.1	§7.3	1.2	2.8	45.7
Jan. Aug.	Prop. Part'ship.	168	13.11	H2.5	2.8	2.2	35.5
Jan. July	Prop. & Rev. 'A'	420	11.12	5.24	1.7	1.9	46.3
Apr. Oct.	Prop. Sec. Inv 50p	169	29.1	t1.39	0.1	1.2	—
—	Raglan Prop. 5p	6¾	374	—	—	—	—
—	Regalian	24	474	—	—	—	—
April Oct.	Regional Prop.	126	29.1	1.11	3.1	1.3	37.0
April Oct.	Do. 'A'	118	29.1	1.11	3.1	1.4	34.6
Jan. June	Rush & Tompkins	143	8.5	3.23	ϕ	3.4	ϕ
December	Samuel Props.	117xd	21.5	†d2.3	1.9	3.0	(21.0)
Aug. Jan.	Scot. Metrop. 20p	134xr	16.10	P2.5	1.2	2.8	45.3
Mar. Oct.	Second City 10p	51	18.9	†h1.75	2.8	5.2	7.7
Oct. May	Slough Ests.	173	23.4	N3.29	2.0	2.8	28.1
June Dec.	Do. 10% Conv. '90	£222	13.11	Q10%	15.9	†4.6	—
Apr. Aug.	Stock Conversn.	378	29.1	†2.03	7.2	0.8	25.5
April Oct.	Sunley (B) Inv.	350	26.2	4.38	0.6	1.9	133.8
—	Swire Properties	37	—	Q28c	ϕ	8.4	ϕ
December	Town Centre	80	27.11	h0.61	2.0	1.1	65.7
Apr. Oct.	Town & City 10p	19½	24.7	0.01	—	—	—
Apr. Nov.	Trafford Park	152	12.3	§4.96	1.7	4.9	18.2
October	U.K. Property	30½	4.9	0.33	3.1	1.6	22.9
Nov. April	Utd. Real Prop.	410	26.2	5.62	1.2	2.0	62.6
Mar. Sept.	Warner Estate	238xd	21.5	†2.97	1.6	1.9	48.7
Apr. Oct.	Warnford Inv. 20p	425	12.3	7.64	ϕ	2.7	ϕ
Nov. Dec.	W'stmin. & C'ty P.	35	26.2	1.0	1.6	4.3	(17.9)
—	W'minster P. 20p	43	375	—	—	—	—
July Oct.	Winston Ests.	71xd	21.5	1.42	2.0	3.0	25.4

INDUSTRIALS—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
	Mathesons 7¾pc.	£88	—	Q7¾%	2.3	†9.1	—
Nov.	Maynards	136	26.3	†5.49	2.7	6.0	8.2
Feb.	Mentmore 5p	16xd	21.5	1.01	ϕ	9.4	ϕ
June	Metal Box £1	336	27.11	§18.09	2.9	8.0	4.9
June	Metal Closures	122	26.3	4.7	2.9	5.8	9.0
June	Mettoy	64	8.5	2.6	5.5	6.1	4.3
Oct.	M'santo 5pc 82-6	£91	15.1	Q5%	19.8	†5.6	—
	Monument 10p	6	1073	—	—	—	9.2
July	Morgan Crucible	136	8.5	5.89	ϕ	6.5	ϕ
Apr.	Morrall (Abel)	40	5.4	2.42	ϕ	9.3	ϕ
June	Moss (Robt.) 10p	39	11.12	†2.07	2.1	7.9	7.3
April	Movitex 10p	27	18.9	0.34	2.8	1.8	29.3
April	Myson Gp. 10p	90	23.4	2.75	4.0	4.6	6.8
Sept.	Nash (J. F.) Secs.	80	29.1	5.77	2.5	10.8	4.3
June	Nathan (B. & I.)	69	8.5	3.63	4.7	7.9	3.0
Aug.	Nat. C'rb'nsg 10p	52	10.7	‡1.35	—	3	—
Nov.	N.C.R. 4% 93/98	£95	23.4	Q4%	11.9	†4.2	—
ber	Negretti & Zambra	61	21.8	3.68	1.5	†4.1	9.6
April	Neill&Sp'ncer10p	187	26.3	4.7	4.5	3.8	8.1
Apr.	New Equip. 10p ¢.	24	12.3	0.99	2.1	6.2	11.7
Aug.	Norcros	103	2.1	b4.58	2.9	7.1	6.0
Oct.	Norvic Secs. 10p	23	26.3	0.8	1.2	5.2	(21.7)
April	Nu-Swift 5p	26	12.3	1.75	1.5	10.0	9.8
Nov.	Oce Finance Cv.	£85	23.4	Q9%	—	†10.1	—
June	Office & Elect.	177xd	21.5	4.6	3.8	3.9	10.1
May	Ofrex 20p	122	9.4	3.6	3.8	4.4	8.9
June	Ovenstone 12½p	16xd	21.5	†06c	2.5	†	1.4
June	P.M.A. (Holdings)	122xr	30.10	b4.02	3.3	5.0	9.0
Oct.	Parker Knoll 'A'	104	12.3	†t2.41	7.4	3.5	6.6
Aug.	Pauls & Whites.	144	27.11	§6.6	2.5	4.6	7.7
Nov.	Pentland 10p	27	8.5	0.85	5.6	4.7	4.2
July	Pentos 10p	84xd	21.5	t3.39	3.1	5.7	9.0
	Do. Defd. 20p	94	—	—	—	—	—
June	Petrocon 12½p	52	8.5	4.51	1.0	13.0	11.5
	Philips Patents	23	1175	8	—	—	24.8
Dec.	Photo-Me 50p	345	23.4	†6.03	5.2	2.6	9.2
Aug.	Pilkington Br. £1	357	11.12	†h5.85	5.7	2.4	10.4
Dec.	Pitn'y Bowes Ln.	£65xd	21.5	Q5⅛%	5.4	8.7	—
April	Plastic Const. 10p	40	7.8	d2.32	2.8	9.0	8.5
Nov.	Polymark 10p	63	26.2	3.04	ϕ	7.4	ϕ
July	Portals	278	23.4	8.79	2.8	4.9	10.8
July	Powell Duff. 50p	169	27.11	†10.15	P5.0	9.0	4.2
Aug.	Press (Wm.) 5p	24½	30.10	1.04	ϕ	6.8	ϕ
Mar.	Prestige Group	200	12.2	6.24	3.1	4.7	9.8
June	Pritchard Svs. 5p	45	13.11	†1.51	3.7	5.0	6.7
May	Prov. Launds. 5p	33½xr	23.4	0.43	ϕ	1.9	ϕ
	Do. 12% cnv. '86-88	300xr	—	Q12%	ϕ	†4.0	ϕ
Sept.	R.F.D. Group 10p	57	15.1	†1.6	8.2	4.2	3.8
July	RTD Group 20p	13	1.12	—	—	—	1.9
July	Radiant Mtl. 12½p	38	2.1	1.93	3.5	7.6	5.7
Apr.	Rank Org.	232	29.1	H10.7	3.1	6.9	6.8
July	Reckitt Col. 50p	475	8.5	11.85	3.5	3.7	(8.5)
Feb.	Redfearn Glass	238	2.1	15.84	1.7	10.2	(7.2)
June	Reed Exec. 5p	132	8.5	5.59	2.9	6.3	7.7
Aug.	Reed Intl. £1	193	13.11	8.0	4.4	6.4	4.9
June	Relyon PBWS	105	26.3	4.57	2.3	6.5	9.9
	Renown Inc. Y50	165	277	Q20%	ϕ	1.6	ϕ
Oct.	Renwick Group	49	11.12	†1.02	4.4	3.1	3.9
Sept.	Restmor	80	29.1	†h1.8	5.6	3.4	8.0
Au.	Rexmore	68	27.12	†d4.31	1.8	9.5	(7.4)
Nov.	Ricardo	336	9.4	7.0	3.6	3.1	9.7
Jan.	Riley (E. J.) 10p	62xd	21.5	†2.6	1.9	6.4	12.4
May	Rockware	107	26.3	5.9	3.5	8.2	3.9
Aug.	Ropner Hldgs.	56	27.11	†2.16	3.4	5.8	7.7
Aug.	Do. 'A'	55	27.11	†2.16	3.4	5.9	7.5
July	Rotaprint 20p	40	15.1	2.93	ϕ	11.5	ϕ

MOTORS, AIRCRAFT TRADES—Commercial Vehicles

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
—	Peak Invests. 10p	11½	577	—	—	—	—
Oct. Apr.	Plaxtons	165	2.1	d4.75	5.6	4.4	5.4
July Oct.	York Trailer 10p	49xd	21.5	d2.39	2.1	7.3	7.6

Components

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Mar. Sept.	Abbey Panels	66	12.2	2.68	3.4	6.1	7.2
Feb. July	Airflow Stream	48	13.11	dh2.46	4.3	7.8	3.8
May Nov.	Armst'ng Eq. 10p	73	26.3	†d2.26	3.9	4.6	8.3
July Jan.	Assoc. Eng'g.	100	2.1	†5.24	3.1	7.9	6.1
September	Automotive	94xd	21.5	1.52	ϕ	2.4	ϕ
Aug. Mar.	Bluemel Bros.	64	2.1	3.82	1.9	8.9	8.8
Dec. June	Brown Bros. 10p	31	9.4	†1.08	3.7	5.2	5.6
Dec. June	Dana Corp $1	£15¼	23.11	Q144c	3.3	4.8	7.1
Apr. Sept.	Dowty 50p	331	12.2	†4.5	4.6	2.0	16.1
Jan. July	Dunlop 50p	74	8.5	5.3	1.5	10.7	8.7
Dec. June	Flight Refuelling	265	8.5	3.6	ϕ	2.0	ϕ
	Hrmn. Smith 10p	16½	11.77	Z0.23	—	2.1	—
July Dec.	Kwik-Fit Hldgs. 10p	58½xd	21.5	F1.34	ϕ	3.4	ϕ
May Dec.	Lucas Inds. £1	290	9.4	†9.18	4.6	4.7	4.9
Oct. July	Supra Group 10p	74	23.4	1.58	3.3	3.2	10.8
Jan. July	Wilmot Breeden	114	8.5	+3.44	3.2	4.5	7.9
Feb. Aug.	Woodhead (J.)	95	2.1	†5.86	5.8	6.1	5.0
May	Zenith 'A' 50p	86	9.4	2.62	ϕ	4.6	ϕ

Garages and Distributors

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Sept. April	Adams Gibbon	82	26.2	4.62	3.0	8.4	6.0
—	Alexanders 5p	16½	569	—	—	—	11.7
Nov. May	Appleyard Grp.	93	9.4	6.25	2.5	10.0	4.7
Feb. Aug.	Arlington Motor	118	11.12	†2.51	2.6	10.0	4.7
Jan. July	BSG Int. 10p	41½	8.5	2.38	2.8	8.6	(4.8)
Aug. Mar.	Braid Group 5p	42	29.1	1.54	4.3	5.5	6.4
Nov. May	Bramall (C. D.)	97	23.4	a4.56	3.6	7.0	(4.4)
May Nov.	Brit. Car Auct. 10p	72½	23.4	†2.51	2.0	5.3	14.2
Mar. July	C.G.S.B. 10p	23	12.2	1.59	2.4	10.3	5.9
Jan. July	Caffyns 50p	123	2.1	†6.50	2.4	7.9	7.8
Jan. July	Cowie (T.) 5p	51	29.1	2.27	4.2	6.6	3.8
Jan. Aug.	Davis Godfrey	126	27.11	3.32	5.8	3.9	5.0
Jan. June	Dorada	73xc	23.4	b4.57	2.7	9.4	6.0
Jan. July	Dutton Forshaw	48½xd	21.5	3.13	3.6	9.6	(3.2)
August	Gates (F.G.)	67xd	21.5	1.7	ϕ	3.8	ϕ
March	Glanfield Lawr.	54	12.2	1.25	1.6	3.5	24.2
May	Hanger Invs. 10p	34	9.4	d0.5	32.8	0.9	3.6
Jan. June	Harrison (T.C.)	145xd	21.5	4.92	3.9	5.1	7.5
Jan. July	Hartwells	118	13.11	6.7	ϕ	8.8	ϕ
Aug. Apr.	Henlys 20p	118½	29.1	8.71	3.0	11.0	4.3
Oct. April	Heron Mtr. Grp.	47	26.2	†h1.46	3.7	4.6	7.0
Dec. June	Hurst (Charles)	68	8.5	5.96	ϕ	13.1	ϕ
Jan. July	Jessups	49½xd	21.5	†1.98	4.4	6.0	5.7
Apr. Oct.	Kenning Mtr.	79	29.1	4.63	3.6	8.7	3.9
Oct. May	Lex Service Grp.	104½	12.3	4.5	4.6	6.4	3.7
Oct. April	Lookers	60	12.3	2.74	5.5	6.8	3.0
May Oct.	Lyon & Lyon	79	9.4	6.0	2.1	11.3	(4.9)
—	Manor Nat. Group 20p	29	25.4	2.14	ϕ	11.0	ϕ
—	Nelson David 5p	14½	1072	—	—	—	37.8
—	Pennine Com. 10p	11	—	—	—	—	ϕ
Dec. June	Perry (H.) Mtrs.	159	21.5	3.68	7.2	3.5	4.4
May Oct.	Quick (H. & J.) 10p	47	26.3	1.83	4.5	5.8	5.7
May	Tate of Leeds	124	26.3	1.25	20.6	1.5	3.4
June Nov.	Wadham Str. 10p	42	8.5	2.46	3.1	8.7	4.4
Dec. July	Western Mtr.	88xd	21.5	2.46	2.7	4.2	(10.2)

INDUSTRIALS—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Nov.	Rowan & Boden	51	8.5	1.47	ϕ	4.3	ϕ
May	Royal Worcs.	194	9.4	7.13	3.5	5.5	7.2
July	Russell (A.) 10p	128	11.12	†2.27	5.9	2.7	9.6
	Ryan (L.) 5p	18½	174	—	—	—	6.1
July	St.-Gobain Frs.100	£17½	28.6	Q13.65%	ϕ	10.4	ϕ
June	Sale Tilney	203	26.3	5.63	3.7	4.1	9.6
June	Sanford Mit. 10p	52xd	21.5	1.17	5.3	3.4	5.9
July	Sangers Grp.	111	11.12	6.38	ϕ	8.9	ϕ
Aug.	Scapa Group	104	11.12	†5.52	2.8	7.9	5.8
A.	Schlumberger $1	£40⅞	13.12	Q1.10	4.6	1.3	10.6
July	Scotcros	76	13.11	†3.29	2.5	6.5	9.4
June	Scot. Heritable	58xd	21.5	1.23	7.7	3.2	4.3
Aug.	Scot. & Un. Invs.	211	15.1	†¢9.5	2.1	6.7	10.9
ly	Sears Hldgs.	56xd	21.5	1.44	¢3.6	3.8	12.1
Mar.	Securicor Gp.	188	26.2	2.54	7.1	2.0	9.4
Mar.	Do. 'A' N-V	182	26.2	2.54	7.1	2.1	9.1
Mar.	Security Services	188	26.2	3.55	4.0	2.8	10.3
Mar.	Do. 'A' N-V	186	26.2	3.55	4.0	2.8	10.2
Oct.	Sharna Ware 20p	172	9.4	d2.66	10.1	2.3	5.7
Sept.	Siebe Gorman	219	2.1	†5.67	4.0	3.9	8.3
June	Silentnight 10p	115	8.5	3.65	ϕ	4.7	ϕ
June	Silhouette 'A' 20p	42	8.5	3.32	2.0	11.8	(5.0)
July	Silv'rthorne 10p	22	29.1	1.5	2.8	10.4	5.1
Jan.	Simpson (S.) 'A'	124xd	21.5	4.26	3.3	5.1	8.7
July	Sketchley	197	27.11	§5.49	2.9	4.2	12.5
May	Smith&Neph. 10p	80½	9.4	2.71	2.7	5.0	9.3
Dec.	Smiths Inds. 50p	228	23.4	†8.09	3.4	5.3	6.8
May	Solic. Law 20p	38	2.10	1.47	2.4	5.8	10.6
Feb.	Somic	33	11.12	†2.34	1.6	10.6	8.8
Feb.	Sotheby P.B.	330	26.2	9.0	3.4	4.1	10.0
Nov.	Sparrow (G. W.) 20p	125	23.4	2.4	4.2	2.9	9.8
Aug.	Spear (J.W.)	170	27.11	2.09	ϕ	1.8	ϕ
Dec.	Staffs. Potts	112	12.3	†h3.16	4.5	4.2	6.0
May	Stag Furniture	196	9.4	6.5	5.0	4.9	5.3
Apr.	Steetley	207	26.3	7.2	3.7	5.2	6.4
	Steinx Manf. HK$1	25	9.75	Q54c	1.1	18.2	5.1
Aug.	Sterling Inds. 2½p	32	12.2	†1.29	2.1	6.0	11.9
Dec.	Stocklake	97	12.3	†2.87	4.2	4.4	6.3
July	Stonehill Hlds.	152	12.2	8.0	ϕ	8.1	ϕ
Nov.	Sumner (F.) 10p	12xd	21.5	0.79	ϕ	9.8	ϕ
May	Sunlight Serv. 10p	42	8.5	1.34	3.8	4.8	8.2
Aug.	Sutcliffe Speak.	43	2.1	†2.66	4.4	9.2	5.1
	Swedish Match Kr50	800	8.5	Q10%	ϕ	7.7	ϕ
ober	Swire Pacific 60c	85	9.5	t036c	ϕ	3.6	ϕ
Sept.	Syltone	193	12.2	†t5.7	4.7	4.4	7.2
ary	Talbex 5p	11	28.11	0.55	3.3	7.5	4.7
—	Tebbitt 10p	10¼	574	—	—	—	—
Aug.	Thermal Synd.	146	26.2	6.0	1.1	6.1	(21.9)
July	Th. Times Vn. 5p	15	27.11	†d0.42	3.6	4.1	7.2
April	Third Mile Inv.	22½	2.10	1.00	2.4	6.7	8.7
May	Tilling T. 20p	140xr	9.4	N6.0	3.7	6.4	5.8
	Toothill R.W	58	776	—	—	—	—
	Toye	86	15.5	d1.4	ϕ	2.5	ϕ
Aug.	Trafalgar H. 20p	72xd	21.5	†h3.84	2.7	8.0	6.0
S.D.	Trans. Un. US$1	£18⅛	8.5	Q$2.12	—	5.7	—
May	Transport Dev.	79½	12.3	3.60	2.0	7.3	10.0
—	Tranwood Gp. 5p	6¼	176	—	—	—	ϕ
	Triefus	137	12.6	2.23	4.8	2.4	12.1
May	Turner & New. £1	149	23.4	11.5	1.3	11.5	(9.8)
Aug.	UKO Intl.	146	11.12	†8.95	1.5	9.1	(9.2)
May	Unicorn Indust's	124	9.4	N6.83	2.5	8.2	8.0
Aug.	Uniflex 10p	97	12.6	3.07	ϕ	4.9	ϕ
May	Unilever	600	9.4	13.94	2.8	3.5	7.9
May	Un'v N.V. Fl.12	£20⅞	8.5	Q44%	2.6	6.4	2.7
June	Utd. Carriers 10p	118	8.5	2.93	4.7	3.7	7.3
Sept.	United Gas Inds.	80	2.1	†3.68	2.2	6.9	8.7
rch	U. Guarantee 5p	29½	29.1	0.2	14.1	1.0	10.4

NEWSPAPERS, PUBLISHERS

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Jan. Aug.	Assoc. News	233	26.11	†5.9	4.2	3.8	9.4
Nov. May	Ass. Book P. 20p	313	8.5	5.13	ϕ	2.4	ϕ
May Dec.	BPM Hldgs. 'A'	74	16.10	3.2	5.3	6.5	4.5
Apr. Sept.	Benn Brothers	62	26.2	†2.37	2.7	5.7	9.7
July Oct.	Black (A. & C.)	168	23.4	d5.39	3.4	4.8	9.2
Feb. Sept.	Bristol Post	128	11.12	†6.52	2.1	7.6	9.3
Oct. May	Collins William	160	26.3	5.18	3.2	4.8	7.2
Oct. May	Do. "A"	148	26.3	5.18	3.2	5.2	6.6
Feb. Aug.	Daily Mail 'A' 50p	450	2.1	†12.8	1.4	4.3	24.6
Jan. July	E. Mid. Allied 'A'	82	27.11	2.32	ϕ	4.3	ϕ
Apr. Oct.	Gordon & Gotch	78	2.10	m2.68	4.7	5.1	6.1
Oct. May	Home Counties	90	9.4	5.0	3.5	8.3	5.2
Oct. Feb.	Independent	220	15.1	11.06	2.3	7.5	8.5
Jan. July	Int. Thomson£1	365xd	21.5	10c	6.4	2.1	11.5
Jan. July	do. Conv.	305xd	21.5	10.5	6.4	†5.1	—
Oct. Apr.	L'pool D. Post 50p	132	26.3	8.11	ϕ	9.2	ϕ
Nov. July	Marshall Cav. 10p	52xd	21.5	4.42	ϕ	12.7	ϕ
Nov. June	News Int.	356	23.4	9.93	5.7	4.2	6.3
Nov. July	Pearson Longman	251	29.8	6.68	4.5	4.0	8.3
Feb. July	Portsm'th & Sund.	99	13.11	4.2	ϕ	6.6	ϕ
Jan. July	Pyramid 10p	50xd	21.5	2.74	ϕ	8.2	ϕ
Mar. Sept.	Routledge & KP	230	29.1	†4.11	4.5	2.7	12.5
May Oct.	Sharpe (W. N.) Hldgs.	225	12.3	d4.53	5.5	3.0	9.1
Nov. June	Utd. Newspapers	373	23.4	15.61	ϕ	6.2	ϕ
Dec. June	Websters Pub. 5p	62	23.4	1.50	3.6	3.6	11.1
April Sept.	Wilson Bros. 20p	37	12.2	†1.42	4.1	5.7	5.7

PAPER, PRINTING ADVERTISING

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Apr. July	Assoc. Paper	53½xd	21.5	3.48	2.7	9.7	4.3
Jan. July	Do. 9½pc Conv.	£110	27.11	Q9½%	18.7	†8.9	—
Oct. Apr.	Ault & Wiborg	58½	26.3	2.16	4.2	5.5	6.3
Dec. May	Bemrose	86	9.4	4.27	3.4	7.4	(4.4)
June Jan.	Brit. Printing	47½	9.4	3.5	3.3	11.0	3.1
Jan. July	Brunning Grp.	64	27.11	3.85	ϕ	9.4	ϕ
Jan. July	Do. Restric. Vtg.	60	27.11	3.85	ϕ	10.0	ϕ
Nov. June	Bunzl Pulp	100xd	21.5	5.48	3.7	8.2	4.5
Dec. June	Capseals 5p	48	9.4	§2.12	4.0	6.6	6.2
Jan. July	Causton (Sir J.)	47	11.12	†1.75	5.9	5.9	5.6
Jan. Aug.	Chapman Bal. 50p	130	2.1	4.34	ϕ	5.1	ϕ
Sept. May	Clay (Richard)	96	26.3	2.94	ϕ	4.6	ϕ
June Nov.	Collett D'son 10p	114	16.10	†3.65	4.9	4.9	6.2
Jan. June	Cropper (James)	113	11.12	1.5	9.3	1.8	5.7
Aug. Feb.	Culter Guard	29	26.6	1.02	3.3	5.2	8.8
—	Delyn 20p	17	275	—	—	—	62.6
Nov. July	DRG	125xd	21.5	7.82	1.7	9.3	9.0
Sept. Apr.	East Lancs. Ppr	69	26.3	3.68	3.5	8.0	5.4
July Nov.	Eucalyptus	60	27.11	‡4.25	1.7	‡	5.7
Apr. Nov.	Ferry Pick 10p	128	23.4	†2.86	3.6	3.3	12.6
Nov. May	Geers Gross 10p	54	30.10	t3.05	2.1	8.4	8.8
Dec. May	Harrison & Sons	63	23.4	4.26	1.1	10.1	(12.2)
Apr. Sept.	Inveresk Grp. 50p	48	26.3	2.83	1.1	8.8	(15.4)
Dec. June	L. & P. Poster 50p	257	23.4	12.0	3.8	7.0	5.4
July Feb.	McCorquodale 50p	132	26.2	h6.35	3.2	7.2	5.6
Sept.	Melody Mills	135	21.8	3.24	4.2	3.6	10.0
May Nov.	Mills & Allen 50p	245	26.3	†5.0	7.0	3.0	6.3
July Dec.	More O'Ferr. 10p	127xd	21.5	4.0	ϕ	4.7	ϕ
F.J.S.D.	Ogilvy & M. $2	£11⅛	8.5	Q$1.16	4.1	5.1	8.0
Sept. Apr.	Olives Paper 20p	33	26.2	h1.34	3.6	6.1	6.9
Jan. June	Oxley Print Grp	62	8.5	2.76	ϕ	6.7	ϕ
Apr. Sept.	Saatchi 10p	218	2.1	4.79	3.5	3.3	12.9
Mar. July	Smith (Dvid) 20p	81	29.1	P4.75	4.4	8.8	6.9
Jan. July	Smurfit (Jeffsn.)	147xd	21.5	F8.75	ϕ	8.2	ϕ
Jan. July	Transparent Ppr.	73	11.12	5.51	ϕ	11.8	ϕ
Jan. July	Usher Walker 10p	64xd	21.5	3.61	1.3	8.4	16.3
Sept. Mar.	Wace Group 20p	88	9.4	1.76	ϕ	3.0	ϕ
Feb. Aug.	Waddington (J.)	178	15.1	11.31	1.2	9.6	13.3
Nov. May	Watmoughs	130	26.3	h3.04	4.4	3.5	9.7
Nov. May	Wyatt(W'arow) 5p	26	2.1	21.0	—	5.7	—

INDUSTRIALS—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
July	Unochrome 10p	11	15.5	†0.23	1.5	†	74.2
July	Valor	90	27.11	†2.17	4.1	3.6	7.3
—	Viners 10p	26xd	21.5	1.0	ϕ	5.7	ϕ
Aug.	Vinten Grp. 20p	141	2.1	†h1.04	9.4	1.1	13.6
Dec.	"W" Ribbons 10p	41	27.11	‡3.35	0.2	‡	—
June	Wade Potts. 10p	60	8.5	†1.12	6.2	2.8	7.3
May	Walker Hmr. 5p	12½	30.11	†d0.9	—	‡	—
Nov.	Waterford 5p	51	26.3	Q2.4	ϕ	4.7	ϕ
Oct.	Watsham's	349	12.2	H8.1	4.4	3.5	19.7
Aug.	Watson R.K. 10p	124	11.12	†d2.40	3.5	2.9	14.9
Dec.	Wedgwood	95	27.11	h3.80	3.5	6.0	5.6
Sept.	Westn. Board 10p	90	29.1	†d3.76	2.4	6.2	9.9
Nov.	W'lock. M.H.K$1	39½	17.1	HQ17c	2.1	4.1	11.5
Oct.	Whatman R Angel	233	8.5	4.52	ϕ	2.9	ϕ
Aug.	Whitecroft	116	2.1	§7.48	2.0	9.6	6.6
—	Whiteley B.S.&W.	26	677	—	—	—	—
May	Wilkes (J.)	80	26.3	4.12	2.2	7.7	8.5
June	Wilkins Mitchell	47xd	21.5	2.21	0.5	7.0	67.5
Oct.	Wilk'sn. M'tch. £1	173	29.1	†10.0	2.1	8.6	7.2
Dec.	Do. 10pc Cnv.	£86	27.11	Q10%	15.7	Q11.8	—
Feb.	Williams (J.)	40	11.12	2.75	2.1	10.5	6.8
Nov.	Wills (George)	69	8.5	3.35	3.9	7.2	5.3
Dec.	Wilson Walton 10p	38	2.10	†3.23	2.6	‡	3.6
May	Wion Inds. 20p	57	8.5	3.12	ϕ	8.2	ϕ
Oct.	Witter (Thomas)	50	26.2	3.51	2.7	10.5	5.2
Nov.	Wood & Sons 5p	52	8.5	d1.67	1.9	4.8	(14.8)
ay.	Wood (Arthur) 5p	31xd	21.5	1.8	5.7	4.8	4.8
mber	Wood Hall	95	13.11	t5.94	1.5	9.3	12.0

INSURANCE

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
June	Bowring (C. T.)	125xd	21.5	3.36	5.3	4.0	7.0
July	Brentnall Bd. 10p	26	18.7	0.57	—	3.6	—
Sept.	Britannic 5p	174	26.3	10.14	—	8.7	—
S.D.	Combined Ins. $1	£10½	29.1	Q$1.2	—	5.8	—
May	Comm. Union	154	26.3	8.54	—	8.3	—
July	Eagle Star	161	8.5	6.84	—	6.3	—
	Edin. & Gen. Ins. 10p	32	—	—	—	—	—
Dec.	Equity UK 9% Cnv.	£121	13.11	Q9%	—	†7.4	—
ne	Equity & Law 5p	218	8.5	7.75	—	5.3	—

PROPERTY

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
July Dec.	All'd London 10p	78	27.11	2.06	2.6	4.0	14.7
Jan. Sept.	Allnatt London	330	13.11	d4.37	2.2	2.0	35.1
—	Amal. Estates	16½	—	—	—	—	—
Apr. Oct.	Apex. Props. 10p	112	26.2	†h1.31	1.6	1.7	52.5
Mar. Oct.	Aquis. Secs. 5p	30	26.2	0.72	1.1	3.6	38.5
August	Avenue Cl'se 20p	106	26.6	1.65	1.2	2.3	55.7
Sept. Mar.	Beaumont Props.	122	26.2	3.87	1.1	4.7	29.3
Jan. Apr.	Beazer (C. H.) 10p	81	23.4	t5.2	1.9	9.6	7.4
July Dec.	Berkeley Hambro	192xd	21.5	3.65	2.2	2.8	21.0
Nov. July	Bilton (Percy)	242	2.10	6.9	1.3	4.3	26.0
Dec. Aug.	Bradford Prop.	430	13.11	†6.91	4.8	2.4	12.9
—	British Land	76½	26.3	—	—	—	—
Apr. Oct.	Do. 12pc Cnv. 2002	£254	2.10	Q12%	—	†4.8	—
July Nov.	Brixton Estate	150	2.10	2.32	1.8	2.3	(45.0)
Jan. July	Cap. & Counties	92	27.11	2.11	ϕ	3.5	ϕ
—	††Carlton Real 10p	29	—	0.0	—	—	—
Jan. Sept.	Carrington Inv. 50p	115	4.9	d2.28	1.2	3.0	43.0
—	C'nrovincial 20p	121	974	t1.35	—	1.7	—
—	Do. Cap. 20p	121	—	—	—	—	—
Aug. Jan.	Chesterfield	485	8.5	4.46	ϕ	1.4	ϕ
Dec. June	Churchb'ry Est.	370#	11.12	6.66	ϕ	2.7	ϕ
Apr. Sept.	City Offices	89	9.4	2.84	1.2	4.6	(24.4)
Jan. July	Clarke Nickolls	105	23.4	2.19	6.1	3.1	7.0
Jan. July	Control Secs. 10p	42½	27.11	†0.84	0.9	3.0	(40.4)
July Apr.	Corn Exchange 10p	325	12.2	†2.23	2.8	1.0	51.8
Apr. Oct.	C'ntry New T. 10p	40	26.2	0.66	—	2.5	—
Nov. May	C'nty & Dist. 10p	193	12.2	†0.88	4.4	0.7	36.0
Mar. Sept.	Daejan (Hldgs.)	156	12.2	†3.04	4.2	2.9	11.0
Sept. Feb.	Dares Estates 10p	21½	23.4	0.75	3.0	5.2	(7.3)
June Dec.	Dorrington 10p	75	30.10	†3.14	1.6	6.2	15.2
July	Ests. & Agency	90#	10.7	0.46	2.6	†12.8	75.4
Nov. June	Ests. & Gen. 20p	33xd	21.5	1.2	ϕ	5.4	ϕ
Apr. Nov.	Ests. Prop. Inv.	144	26.2	†2.36	1.9	2.4	31.9

SHIPPING

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Dec. Aug.	Brit. & Com. 50p	368	27.11	†9.40	3.4	3.8	11.6
May Dec.	Common Bros. 50p	202	8.5	‡12.0	ϕ	8.9	ϕ
Oct. May	Fisher (J.)	258	26.3	1.70	11.0	1.0	9.5
Dec. May	Furness Withy £1	274	8.5	9.12	2.5	5.0	(9.1)
Jan. July	Hunting Gibsn. £1	215	8.5	5.1	7.1	3.5	4.8
May Oct.	Jacobs (J. I.) 20p	40½	9.4	d1.9	0.7	7.0	(37.7)
—	Lon. O'Seas. Frtrs.	44	677	—	—	—	—
Jan. July	Lyle Shipping	177	27.11	5.47	—	4.7	—
June Oct.	Man. Liners 20p	230	13.11	1.0	ϕ	0.7	ϕ
—	Mersey Dk. Units	27½	—	—	—	—	—
July	Milford Docks £1	187	30.5	†2.94	5.8	2.4	12.4
Nov. May	Ocean Transport	94½	23.4	8.38	0.7	13.2	(24.2)
Jan. July	P. & O. Defd. £1	99	8.5	6.54	q0.4	9.9	(125.6)
Apr. Oct.	Reardon Sm. 50p	100	2.10	0.1	—	0.2	—
Apr. Oct.	Do. 'A' 50p	58	2.10	0.1	—	0.3	—
Jan. July	Runciman (W.)	64xd	21.5	3.75	—	8.7	—

SHOES AND LEATHER

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
July Feb.	Allebone 10p¢	25½xd	21.5	1.33	2.7	7.8	(5.4)
Sept. Feb.	Booth (Intn'l)	60	30.10	4.69	ϕ	12.3	ϕ
April Dec.	Footwear Invs.	74	26.2	†d4.39	2.2	8.8	6.9
Oct. June	Garnar Scotblair	100xd	21.5	5.0	ϕ	7.5	ϕ
Dec. June	Headlam, Sims 5p	69	13.11	H1.7	ϕ	3.7	ϕ
Nov. May	Hiltons 20p	95xc	9.4	b3.63	ϕ	5.7	ϕ
June Dec.	K Shoes	70	2.1	†h2.0	5.3	4.3	5.8
Apr. Oct.	Lambert Hth. 20p	51	26.3	3.5	ϕ	10.2	ϕ
Apr. Oct.	Newbold & Burt'n.	59	26.2	h2.48	3.5	6.3	6.8
Oct. April	Oliver (G) 'A'	89	12.3	2.14	5.9	3.6	6.4
Jan. May	Pittard Grp.	45	26.3	3.09	2.5	10.7	4.5
Feb. Aug.	Stead & Sim 'A'	52	15.1	†2.16	2.1	6.2	11.7
Mar. Nov.	Strong & Fisher	78	12.3	†4.73	1.4	9.0	12.2
July	Stylo Shoes	151	21.8	1.92	ϕ	1.9	ϕ
Sept. Apr.	Turner W & E 10p	43	26.3	1.41	ϕ	4.9	ϕ
Sept. May	Ward White	138	9.4	4.02	6.0	4.3	4.3
February	Wearra 10p	40	2.1	1.45	5.2	5.4	3.8

SOUTH AFRICANS

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Apr. Sept.	Abercom R0.30	120	26.2	HQ20c	1.4	10.0	7.0
Sept. Mar.	Anglo Am. In. R1	740	26.3	Q80c	2.7	6.5	5.7
Jan. July	Barlow Rand R.10c	302	13.11	tQ56c	2.8	7.0	3.6
September	Gold Flds. P. 2½c	75	21.8	Q5c	ϕ	4.0	ϕ
July Dec.	Gr'tmns 'A' 50c	170	30.10	Q20c	4.2	7.1	3.0
Nov May	Greaterm Inds. R.025	110	9.4	Q20c	2.6	10.9	3.4
Feb. Aug.	Hulett's Cpn. R1	128	2.1	Q28c	1.6	13.1	4.7
Dec. May	OK Bazaars 50c	420xd	21.5	Q66c	ϕ	9.4	ϕ
—	Rex Truform 'A' 50c	235	—	22Sc	2.6	7.4	5.2
Dec. July	S.A. Brews. 20c	78xd	21.5	Q12c	ϕ	9.3	ϕ
May Nov.	Tiger Oats R1	610	26.3	Q58c	ϕ	5.8	ϕ
Mar. Sept.	Tongaat Curo 10cts	86	18.9	Q5½c	ϕ	7.0	29.2
May Nov.	Unisec	68	26.3	Q11½c	ϕ	10.1	ϕ

TEXTILES

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Sept. Mar.	Allied Textile	156	12.2	7.24	3.0	6.9	7.3
Jan. Aug.	Atkins Bros.	52	11.12	†3.73	2.4	10.7	5.8
Dec. July	Beales (J.) 20p	62	13.11	3.22	ϕ	8.0	ϕ
May Nov.	Beckman A. 10p	86	9.4	†4.98	1.9	8.6	9.1
June Dec.	Blackwood Mort.	29	2.1	0.63	—	3.2	—
Apr. Sept.	Bond St. Fab. 10p	38	15.1	2.9	2.3	11.4	5.6
Dec. July	Bright (John)	40	13.11	‡2.46	1.8	9.2	7.3
—	Brigray Grp 5p	4½	874	ϕ	—	—	—
May	Brit. Enkalon	17	3.78	—	—	—	—
Apr. Sept.	Brit. Mohair	51	9.4	3.14	3.7	9.2	4.4
Feb. Aug.	Bulmer L'mb. 20p	59xd	21.5	3.47	3.6	8.8	4.7
Jan. July	Caird (Dundee)	23	675	—	—	—	—
Dec. May	Carpets Int. 50p	66	23.4	5.0	2.2	11.3	4.8
May Nov.	Carr'gtn Viyella	32½	26.2	2.35	2.1	10.8	(5.4)
October	Cawdaw Ind.	35½	24.7	2.46	1.9	10.3	7.5
Dec. June	Coats Patons	70½xd	21.5	3.65	3.4	7.7	4.9
Oct. May	Corah	39	12.3	2.07	3.6	7.9	4.1
Mar. Sept.	Courtaulds	111	27.11	8.44	q1.2	11.9	9.2
Mar. Sept.	Do. 7% Deb 82/7	£75¼	12.2	Q7%	q23.8	†12.1	—
July	Crowther (J.)	30xd	21.5	c0.73	ϕ	3.6	ϕ
Feb. Sept.	Dawson Intl.	115	11.12	hP7.0	2.5	9.1	6.6
Feb. Oct.	Dixon (David)	147	15.1	H5.33	4.7	5.4	6.4
Nov. July	Early (C.) & M. 10p	54xd	21.5	2.21	2.2	9.7	7.0
Jan. July	Foster (John)	50xd	21.5	2.5	ϕ	7.5	ϕ
Apr. Nov.	Hicking P'st. 50p	126	26.2	†7.24	2.8	8.6	(4.6)
July	Hield Bros. 5p	10xd	21.5	0.74	ϕ	11.1	ϕ
Jan. Aug.	Highams	68	11.12	†3.06	3.6	6.7	6.1
Mar. Oct.	Hollas Grp 5p	69	29.1	4.56	2.2	9.9	6.3
Aug. Feb.	Homfray	31	2.1	d3.12	0.9	15.0	12.5
Oct. Mar.	Ill'gworth M. 20p	26	11.12	†1.50	5.0	8.6	2.5
Oct. Mar.	Do. 'A' 20p	25	11.12	†1.50	5.0	9.0	2.4
Jan. Aug.	Ingram (H.) 10p	44	11.12	m1.31	3.8	4.4	8.6
Nov. May	Jerome (Hldgs.)	51	23.4	3.05	2.7	8.9	6.1
Jan. July	Leeds Dyers	72	11.12	†d1.69	5.8	3.5	7.3
November	Leigh Mills	26	2.10	d1.29	2.0	7.4	(7.8)
—	Levex 5p	18	174	0.67	ϕ	5.7	ϕ
Apr. Dec.	Lister	63	11.12	d1.01	7.1	2.4	6.1
Jan. July	Lyles (S.) 20p	73	27.11	t5.5	1.1	11.6	12.7
May Dec.	Mackay Hugh	56	26.3	d3.62	2.1	9.6	7.6
Apr. Oct.	Mackinnon Scot.	26½	29.1	1.84	3.7	10.4	3.9
Jan. July	Martin (A.) 20p	84xd	21.5	4.13	3.0	7.3	5.1
Nov. June	Miller (F.) 10p	57	23.4	d1.75	3.6	4.6	9.0
Sept. Apr.	Montfort	60	26.3	3.93	3.5	9.8	4.0
July Dec.	Notts. Manfg.	138xd	21.5	3.62	4.9	3.9	6.6
Mar. Sept.	Nova Jersey 20p	33	2.1	†1.5	1.9	6.8	11.8
Jan. June	Parkland 'A'	84	11.12	†hd2.94	7.1	5.2	3.4
Jan. July	Pickles (W.) & Co.	14	16.10	0.4	ϕ	‡	ϕ
Aug. Dec.	Do. 'A' NV 10p	10½	16.10	0.4	ϕ	‡	ϕ
Apr. July	Radley Fashions	68	9.4	†d4.31	2.8	9.5	4.3
Mar. Oct.	Reliance Knit 20p	44	26.2	H3.55	3.1	12.1	3.4
May Feb.	Richards 10p	22	8.5	†1.15	2.7	7.8	7.1
Aug. Dec.	Rivington Reed	58	12.6	†d4.49	2.5	12.0	3.8
—	S.D. 9½pc Conv. £1	102xd	21.5	Q9½%	7.3	F9.3	—
Mar. Oct.	S.E.E.T. 20p	78	29.1	†1.84	9.5	3.5	4.4
July Dec.	Scott Robertson	46	27.11	3.06	ϕ	10.3	ϕ
Sept. Jan.	Sekers Int. 10p	34	27.11	H2.1	ϕ	9.2	9.0
Feb. Aug.	Shaw Carpets 10p	53	2.1	H2.51	1.3	7.1	16.0
June Dec.	Shiloh Spinners	42	8.5	d1.83	3.4	6.5	6.2
Mar. Sept.	Sidlaw Inds. 50p	87	29.1	6.72	1.3	11.5	10.2
Jan. May	Sirdar	112	23.4	†hd2.1	6.5	2.8	7.2
July Dec.	Small & Tidmas	92xd	21.5	4.0	ϕ	6.5	ϕ
April	Smallshaw R. 10p	29	29.1	h1.25	4.4	6.4	5.3
Apr. Aug.	Sn. Viscosa L1200	64	177	—	—	—	—
Apr. Aug.	Do. Priv. L1200	36	177	—	—	—	—
Feb. Oct.	Spencer (Geo.)	36	26.3	2.75	1.4	11.4	9.7
Apr. Nov.	Stoddard 'A'	24	12.3	†d1.33	3.2	8.3	5.7
Jan. July	Stroud Riley Dr'd	30	15.1	1.52	5.1	7.6	2.8
—	Sunbeam Wolsey	45	26.3	Q5.5	3.2	12.2	3.6
Jan. May	Tern-Consulate	70	8.5	d3.6	3.4	7.7	4.5
Mar. Sept.	Text'rd Jrsy. 10p	58	12.2	†1.01	4.2	2.6	12.8
February	Tomkinsons	61	11.12	4.19	2.3	10.2	4.9
Feb. July	Tootal	44	8.5	3.04	c2.0	10.3	5.8
—	Toray Y50	44	11.12	Q10%	1.0	2.6	39.9
April Oct.	Trafford Carpets	36	26.2	1.69	0.8	7.0	(31.4)
Jan. July	Tricoville 10p	90	8.5	h1.76	5.5	2.9	8.9
Mar. Sept.	Vita-Tex 20p	68	12.2	†3.55	2.8	7.4	6.9
Mar. Oct.	Yorks. Fine W. 20p	37	29.1	2.0	2.5	8.1	7.3
Oct. May	Youghal	26	19.9	‡2.08	—	‡	—

TOBACCOS

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Apr. Sept.	BAT Inds.	291	12.2	†14.52	3.4	7.4	(4.4)
—	Do. Defd.	275	7.8	—	—	—	4.9
Jan. June	Dunhill (A.) 10p	433	27.11	9.73	ϕ	3.4	ϕ
Nov. Mar.	Imperial	92	12.2	6.32	1.8	10.1	6.8
Jan. Sept.	Rothmans 12½p	70	11.12	†2.07	9.4	4.4	2.9
Jan. July	Siemssen Hn. 10p	60	8.5	3.12	ϕ	7.8	ϕ

TRUSTS, FINANCE, LAND

Investment Trusts

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Dec. June	Aberdeen Invs.	68xd	21.5	†2.39	1.0	5.2	28.2
Dec. June	Aberdeen Trust	97	8.5	†h3.57	1.1	5.5	24.6
Jan. Sept.	Ailsa Inv.	141	2.1	4.86	1.0	5.1	28.2
Dec. July	Alliance Inv.	112	11.12	†3.05	1.0	4.1	36.3
Oct. May	Alliance Trust	219	26.3	8.0	1.0	5.5	26.5
Nov. July	Altifund Inc. 50p	123	8.5	10.0	ϕ	12.1	ϕ
Nov. July	Do. Capital 50p	215	8.5	†0.43	—	0.3	—
Dec. July	Ambrose Inv. Inc.	77	13.11	5.5	ϕ	11.2	ϕ
—	Do. Cap.	106	—	—	—	—	—
Oct. May	American Trust	43½	9.4	1.55	1.1	5.3	25.7
—	American Tst. 'B'	42½xc	—	—	—	—	—
Aug. Mar.	Anglo Am. Secs	99	26.2	3.3	1.1	5.0	27.2
Sept. Apr.	Anglo-Int. Div.	47½	26.2	3.6	1.0	11.3	12.8
—	Do. Asset Shs.	171	—	—	—	—	—
June Dec.	Anglo-Scot. Inv.	49	8.5	†1.8	1.0	5.5	26.7
Aug. Feb.	Archimedes Inc.	87	2.1	5.7	1.0	9.8	14.8
—	Do. Cap. 50p	48	—	—	—	—	—
Dec. June	Argo Inv. (SA1)	122	3.10	Q12%	1.1	6.1	16.8
Aug. Mar.	Ashdown Inv.	142	26.2	4.6	1.1	4.8	32.3
January	Atlanta Balt. 10p	54½	28.11	0.75	1.6	2.1	44.1
November	Atlantic Assets	99	28.11	0.41	1.8	0.6	134.3
Dec. June	Atlas Elect.	66½xd	21.5	2.25	ϕ	4.9	ϕ
October	Aust. & Int. (50c)	93½	12.3	3.0	1.1	4.8	28.1
N.F.My.Au.	Bankers' Inv.	61	23.4	2.55	1.0	6.3	23.5
December	Berry Trust	76	13.11	t1.0c	1.2	2.1	61.3
—	Bishopsgate Prop.	7	274	—	—	—	—
Nov. June	Bishopsgate Tst.	206xd	21.5	d6.95	1.0	5.0	29.1
May Dec.	Border & Sthn. 10p	62	8.5	†1.7	1.2	4.1	29.5
June	Brazil Fund Cr$1	$10¾	6.75	Q50.93	ϕ	4.9	ϕ
Jan. July	Brazil Inv. Cr$1	$105	15.12	Q55.21	1.0	5.1	19.3
Jan. July	Bremar Tst.	24xd	21.5	2.0	ϕ	12.4	ϕ
Jan. Aug.	Bridgewater	8½	41	—	—	—	—
Apr. Sept.	Brit. Am. & Gen	43	26.2	1.85	1.1	6.4	22.1
Ap Jy O Jan	British Assets	76xd	21.5	g2.6	1.1	5.1	28.4
May Nov.	Brit. Emp. Secs. 5p	16	8.5	†0.7	1.2	6.5	19.9
Feb. Aug.	Brit. Ind. & Gen	106xd	21.5	3.80	1.1	5.4	25.2
Dec. June	Brit. Invest.	152xd	21.5	5.7	ϕ	5.6	ϕ

Finance, Land, etc.

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Feb. July	Akroyd Smithers	228xd	21.5	16.75	5.0	11.0	2.6
—	Armour Tst. 10p	16	1274	t0.1	—	0.9	8.1
—	Aust. Farming	105	—	—	—	—	—
—	Authority Inv. 20p	61	1275	—	—	—	8.0
—	Britannia Arrow	20½	475	—	—	—	—
Oct. Mar.	Challenge Crp. $1	115	12.3	†Q11.4c	2.2	5.6	8.3
Mar. Aug.	Charterhouse Gp.	75xd	21.5	3.69	ϕ	7.3	ϕ
September	Common Mkt. Ln.	£24	25.7	Q42.5	1.0	3.1	‡
May Nov.	Dalgety £1	341	8.5	§16.08	2.1	7.0	(7.7)
Apr. Oct.	Dawnay Day	37	26.3	†1.75	2.9	7.1	5.5
—	††Doloswella	28	—	—	—	—	—
August	Edin. Ind'l. 12½p	11#	677	0.03	—	0.5	—
October	El Oro Mining 10p	69	21.8	d1.1	6.2	2.4	9.9
Feb. Aug.	Erskine House	40	2.1	†1.92	2.6	7.2	6.7
Apr. Oct.	Ex Lands 10p	18	21.8	1.2	3.6	9.3	4.4
October	Exploration Co. 5p	33	21.8	d0.55	6.3	2.6	9.2
Dec. July	Fashion & Gen. 5p	155	27.11	5.51	1.2	5.4	22.1
—	Fitzroy Invest	20#	574	—	—	—	—
Feb. Aug.	Hambro Trust	51	12.2	2.03	ϕ	5.9	ϕ
—	Hampton Tst. 5p	14½	—	—	—	—	—
June	Haw Par. S. $1	41½	25.6	—	—	—	—
Oct. Mar.	Int. Inv. Tst. Jy. £1	279	26.2	†Q4.0	2.2	1.4	35.3
April Oct.	Investment Co.	29	4.9	d3.06	2.9	5.5	9.8
Feb. Sept.	Kakuzi K5/-	100	29.1	HQ100c	2.3	6.7	5.4
April	††Kellock 10p	87	26.2	0.5	3.4	0.9	(46.2)
April	††Do. Conv. Ln. 10p	87	26.2	0.5	3.4	0.9	(46.2)
—	Kitch'n. Taylor 10p	205	12.3	1.54	23.2	1.1	5.3
November	Kwahu 10p	23	18.9	1.84	0.7	11.9	24.3
August	Lamont Hlds. 10p#	18½	26.6	0.3	ϕ	2.5	ϕ
Jan. May	Lon. Euro. Grp.	35	8.5	1.1	3.9	4.7	8.2

INVESTMENT TRUSTS—Cont.

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Oct. Apr.	Broadstone (20p)	160	12.3	5.7	1.0	5.3	29.4
Dec. June	Brunner Inv.	110	15.1	4.0	1.0	5.4	26.7
June Dec.	C.L.R.P. Inv.	74	23.4	2.1	1.0	4.2	33.6
Dec. Aug.	Caledonia Invs.	300	26.6	†8.56	1.3	4.3	26.2
Feb. Oct.	Caledonian Tst.	77	11.12	†1.86	1.0	3.6	42.0
—	Do. "B"	73	—	—	—	—	—
Jun. Dec.	Cambrian and Gen.	94	27.11	†5.87	1.1	6.3	22.0
May	Camellia Invs. 10p	420	28.3	2.25	7.1	0.8	26.0
Dec. June	Can. & Foreign	112xd	21.5	4.2	ϕ	5.6	ϕ
Apr. Nov.	Capital & Nat.	133	12.2	†4.6	1.0	5.2	29.0
—	Do. "B"	128	2.10	—	—	—	—
Sept. Mar.	Cardinal Dfd.	90	7.8	b3.37	1.1	5.8	24.4
Feb. Aug.	Carliol Inv.	121	12.3	4.5	1.1	5.6	23.6
June Dec.	Cedar Inv.	72	23.4	†2.75	1.0	5.7	25.2
June	Chan'l Is. Inc. £1	171	23.4	Q20%	1.0	11.7	ϕ
—	Do. Cap.	215xd	21.5	—	—	—	—
Aug. Mar.	Charter Trust	60	29.1	2.45	1.0	6.1	23.8
Mar. Sept.	City & Com. Inc.	30½	12.3	2.03	1.0	9.9	14.9
—	Do. Cap. (£1)	121	—	—	—	—	—
—	City & For. Inv.	59	—	—	—	—	—
May Dec.	City & Intern't'l	112	9.4	†4.7	1.0	6.3	23.3
Nov. June	City of Oxford	83xd	21.5	3.85	ϕ	6.9	ϕ
Mar. Sept.	Claverhouse 50p	98	12.2	4.43	1.0	6.7	22.2
—	Clifton Invs 10p	8½	674	—	—	—	—
Jan. May	Clydesdale Inv.	73½	12.3	†1.90	1.0	3.9	37.8
—	Do. "B"	70	—	—	—	—	—
Feb. Aug.	Colonial Secs. Dfd.	242	12.2	9.0	1.1	5.6	23.4
Feb. Aug.	Continent'l & Ind.	218	2.1	†6.50	1.0	4.4	32.8
Dec. June	Continent'l Union	123	8.5	4.25	1.1	5.2	27.1
—	Cres'nt Japan 50p	153	26.2	1.3	1.7	1.3	69.2
Mar. Aug.	Crossfriars	92	12.3	3.72	1.0	6.0	24.8
January	Cumulus Inv.	29	27.11	0.82	1.0	4.2	36.1
Feb. Aug.	Danae (Inc.) (50p)	49½	15.1	†3.15	1.1	9.4	14.3
—	Do. (Cap.) 10p	9¼	—	—	—	—	—
Aug. Mar.	Debenture Corp.	91#	12.2	‡2.75	1.1	4.5	29.7
Aug. Feb.	Derby Tst. Inc. £1	245	29.1	14.79	1.0	9.0	16.6
—	Do. Cap. 50p	196	—	—	—	—	—
Dec. July	Dominion & Gen.	201	16.10	H8.5	1.0	6.3	24.9
Feb. Aug.	Drayton Com'cl.	125	12.3	5.0	1.2	6.0	21.4
May Dec.	Do. Cons.	140xd	21.5	5.2	1.1	5.5	23.8
Apr. Aug.	Do. Far Eastern	32	12.2	1.02	1.1	4.8	27.4
Apr. Aug.	Do. Premier	187	26.2	7.4	1.1	5.9	23.5
Nov. May	Dualvest Inc. 50p	66xd	21.5	†4.64	1.0	10.5	15.8
—	Do. Capital £1	270	—	—	—	—	—
Jan. July	Dundee & Lon.	69	2.1	2.60	1.0	5.6	26.0
April	Edinburgh Am. Tst.	57	27.2	b0.6	1.3	1.6	73.4
June Dec.	Edin. Inv. Df. £1	243	16.10	7.8	1.0	4.9	30.5
Jan. July	Electra Inv. Tst.	129	11.12	H5.5	1.1	6.4	23.9
Feb. Aug.	Elect. & Gen.	84	2.1	1.57	1.2	2.8	45.8
Nov. July	Eng. & Internatl.	95	13.11	4.25	ϕ	7.7	ϕ
Oct. April	Eng. & N.Y. Trust	80	12.3	3.0	1.1	5.6	24.8
Sept. Mar.	Eng. & Scot. Inv.	82	26.2	2.65	1.0	4.8	30.6
Dec. June	Eng. Nat. Inv. Prefd.	35xd	21.5	2.02	ϕ	8.6	ϕ
Dec. June	Eng. Nat. Inv. Defd.	74xd	21.5	3.18	ϕ	6.4	ϕ
Jan. June	Equity Cons't £1	118	2.1	†6.87	1.0	8.7	17.0
Sept.	Do. Def'd 50p	177	24.7	5.69	1.1	4.8	29.2
May Dec.	Equity Inc. 50p	254	9.4	†12.06	1.0	7.1	21.7
Dec. June	Estate Duties	88	8.5	2.1	1.1	3.6	37.9
October	F. & C. Eurotrust	48	2.10	1.0	1.1	3.1	45.5
May Nov.	Family Inv. Tst.	122	12.3	4.61	0.7	5.6	25.5
Sept. Apr.	First Scot. Am.	95	12.3	3.15	1.1	5.0	28.6
Nov. Apr.	Foreign & Col.	85	26.2	h2.26	1.0	4.0	36.4
Jan. July	F.U.G.I.T. (R0.25)	62	2.1	Q6¾c	1.2	6.5	13.1
May Nov.	Fundinvest Inc.	38	8.5	†2.69	1.0	10.6	13.9
—	Do. Cap.	67½	—	—	—	—	—
Oct. Mar.	G.T. Japan	154	29.1	†2.02	1.0	2.0	75.2
Nov. Apr.	Gen. & Comm'cl.	160	23.4	6.87	1.0	6.4	22.4
Aug. Apr.	Gen. Consoldtd.	92	26.2	4.25	1.0	6.9	20.7
Sept. Mar.	General Funds	195	26.2	5.45	1.0	4.2	35.6
—	Do. Conv. 10p	156	—	—	—	—	—
Oct. Apr.	Gen. Investors	117	23.4	4.5	1.2	5.7	22.6
Dec. June	Gen. Scottish	92xd	21.5	4.0	ϕ	6.5	ϕ
Mar. Sept.	Gen. St'hldrs. 12½p	123	7.8	†2.3	1.5	2.8	46.3
Mar. Aug.	Glasgow St'hldrs.	104	26.2	2.85	1.1	4.1	33.0
Apr. Nov.	Glendevon Inv.	93	18.9	1.85	1.0	3.0	51.5
—	Do. "B"	88	—	—	—	—	—
Feb. Aug.	Glenmurray Inv.	78½	9.4	1.95	1.0	3.7	39.5
—	Do. 'B' Ord.	74½	—	—	—	—	—
July-Jan.	Globe Inv.	129	11.12	H5.5	1.2	6.4	22.4
July	Govett Europe	57½	30.5	1.8	1.3	4.8	24.6
Mar. Sept.	Grange Trust	91	29.1	2.4	1.2	3.9	32.4
Feb. Aug.	Gt. North'n Inv.	110	29.1	4.5	1.0	6.1	23.7
April	Greenfriar Inv.	100½	29.1	1.65	1.1	2.4	53.9
90	Gresham Hse.	123	30.10	3.0	2.1	3.6	19.5
Jan. June	Gresham Inv.	62½	2.1	†2.03	2.0	4.8	15.7
Mar. Sept.	Group Investors	67	29.1	†1.9	1.1	4.2	32.3
Dec. July	Guardian Inv. Tst.	86½	8.5	3.15	ϕ	5.4	ϕ
July Dec.	Hambros	112xd	21.5	4.1	ϕ	5.5	ϕ
July Dec.	Hill (Philip)	202	30.10	9.15	ϕ	7.0	ϕ
Apr. Oct.	Hume Hlds. "A"	87	26.2	†4.6	1.2	7.9	16.1
—	Do. "B"	84	—	—	—	—	—
Dec. June	Industrial & Gen.	59½xd	21.5	2.15	1.0	5.4	26.9
Sept. Mar.	Internat'l Inv.	83	26.3	2.94	1.1	5.3	25.9
Sept. Apr.	Inv. in Success	191	12.3	3.35	1.3	2.6	43.5
Jan. July	Investors' Cap.	78	29.1	2.0	1.1	3.8	34.5
May	Jardine Japan	121	9.4	1.0	1.4	1.2	89.2
Mar. Sept.	Jardine Sec. HK$5	82	16.10	tQ49c	1.1	5.7	16.0
—	Jersey Ext. Pf. 1p	147	474	—	—	—	—
Nov. June	Jersey Gen. £1	237xd	21.5	Q14.5	ϕ	6.1	ϕ
May Oct.	Jos Holdings	53	12.3	†2.39	1.0	6.7	22.1
May Nov.	Jove Inv. Inc. 10p	52	23.4	3.65	ϕ	10.5	ϕ
—	Do. Cap. 2p	8	—	—	—	—	—
July Feb.	Keystone Inv. 50p	176	11.12	q7.25	1.1	6.2	24.9
Nov. Jun.	Lake View Inv.	99	8.5	3.0	1.0	4.5	ϕ
April	Lanc. & Lon. Inv.	46	26.2	2.0	1.0	6.5	22.6
Apr. Oct.	Law Debenture	124	12.3	5.25	1.1	4.5	31.5
March	Lazard Stlg. Res. 1p	£12¼	27.12	0.9	—	—	—
Aug. Feb.	Leda Inv. Inc. 20p	44	29.1	3.15	1.0	10.7	14.0
—	Do. Cap. 5p	34	—	—	—	—	—
January	Le Valionet Inv.	41	2.5	d1.52	5.2	5.7	‡
Dec. July	Lon. Atlantic	82	27.11	3.6	ϕ	6.7	ϕ
October	Lon. & Gart. 50p	72	4.9	±0.51	2.7	1.0	52.1
Nov. July	Lndn. & Holyrood	125	2.10	4.2	ϕ	5.1	ϕ
June Jan.	Lon. & Lennox	55xd	21.5	2.0	1.1	5.4	25.0
Feb. Oct.	Lon. & Liv. 10p	26	2.1	†0.60	1.3	3.5	33.9
Apr. Oct.	Lon. & Lomond	82	26.3	2.8	1.1	5.1	27.0
Mar. Nov.	Lon. & Montrose	194	12.2	5.9	1.0	4.5	32.4
Nov. June	Lon. & Prov.	116	2.10	3.95	ϕ	5.2	ϕ
Dec. July	Lon. Prudential	90	27.11	3.45	ϕ	5.8	ϕ
May Dec.	Lon. & S'clyde	47	26.3	t1.72	1.2	5.5	25.5
June Dec.	Lon. Tst. Dfd.	117	13.11	4.75	ϕ	6.1	ϕ
June Dec.	Lowland Inv.	61	8.5	g2.8	1.1	6.8	23.0
Sept. Mar.	M & G Dual Inc. 10p	218	15.1	13.1	ϕ	9.0	ϕ
—	Do. Cap. 10p	138	—	—	—	—	—
July Jan.	Do. 2nd. Dual Inc. 10p	95	11.12	H5.75	1.0	9.0	18.7
—	Do. Cap. 4p	29	—	—	—	—	—
—	Man. & Metrop. Inv.	73	—	1.5	ϕ	3.1	ϕ
Mar. Sep.	Meldrum Inv.	53	26.2	2.1	1.1	5.9	22.9
Apr. Sep.	Mercantile Inv.	46	12.3	1.7	1.1	5.5	24.3
Sept. May	Merchants Tst.	76½	9.4	3.0	1.0	5.9	24.9
Feb. July	Monks Invest.	50½	11.12	1.85	ϕ	5.6	ϕ
May	Mont. Boston 10p	47	26.3	0.87	ϕ	2.8	ϕ
—	Do. Wrrts. £1	29	—	—	—	—	—
Jan. July	Moorgate Inv.	113	2.1	†3.88	1.0	5.1	27.8
Aug. Mar.	Moorside Trust	110	26.2	5.23	1.0	7.1	21.8
March	Negit S.A. $US1	800	375	Q11c	0.9	0.7	160.4
Apr.Jly.Oct.	New Throg. Inc.	22¼	12.2	1.62	ϕ	11.4	ϕ
—	Do. Cap. £1	193	—	—	—	—	—
—	Do. New Wrrts.	72	—	—	—	—	—
Dec. June	1928 Invest.	74½	13.11	3.33	ϕ	6.9	ϕ
May Dec.	Nth. Atlantic Sec.	94½	23.4	3.07	1.0	4.8	29.3
June Dec.	Nthn. American	101½xd	21.5	t3.05	1.0	4.5	32.8
Dec. July	Northern Secs.	129	13.11	3.50	1.2	4.1	31.0
Jan. June	Oil & Assoc. Inv.	67	11.12	†2.15	1.1	4.7	29.0
June Nov.	Outwich Inv.	60	30.10	1.9	1.2	4.8	26.3
Apr. Aug.	Pentland Inv.	125	26.3	4.55	1.0	5.5	26.9
Jan. June	Prog. Scs. Inv. 50p	62	27.11	3.1	ϕ	7.7	ϕ
Mar. Sept.	Provincial Cities	31	29.1	†1.5	ϕ	7.2	ϕ
Aug. Feb.	Raeburn	126	29.1	4.05	1.1	4.8	28.5
Feb. Sept.	Reabrook Inv.	53#	12.2	1.24	1.3	3.5	32.2
Apr. Oct.	Rights & Iss. Cap.	35	26.3	0.14	—	—	—
Oct. Mar.	River & Merc.	206	26.2	9.5	1.1	6.9	19.8
Sept. Mar.	River Plate Def.	174	26.2	7.0	1.1	6.0	22.3
Apr. Nov.	Robeco (Br.) Fl50	£44¼	26.3	Q26.4%	1.0	7.4	13.6
Apr. Nov.	Do. Sub. Sh's Fl5	440	26.3	Q26.4%	1.0	7.4	13.5
—	Rolinco NV Fl50	£36	1075	s—	—	—	—
—	Do. Sub. Sh's Fl5	356	1075	s—	—	—	—
Aug. Mar.	Romney Trust	92	26.2	3.0	1.0	4.9	29.8
Apr. Nov.	Rosedimond Inc.	58	23.4	4.6	1.0	11.8	12.6
—	Do. Cap.	92½	—	—	—	—	—
Dec. June	Rothschild In. 50p	237	27.11	†7.11	1.5	4.5	22.5
Dec. June	Safeguard Ind.	89	8.5	†4.0	1.0	6.7	21.5
Oct. April	St. Andrew Tst.	123	26.2	4.9	1.0	5.9	24.2
Jan. July	Scot. Am. Inv. 50p	86½	25.1	2.95	1.0	5.1	28.3
Dec. June	Scot. Cities 'A'	200	12.3	8.74	1.0	6.5	22.0
Feb. Aug.	Scot. East. Inv.	67½	12.3	h2.4	1.1	5.3	26.5
Dec. July	Scot. European	40½	30.10	1.65	ϕ	6.2	ϕ
July Jan.	Scottish Inv.	101½	11.12	†3.0	1.0	4.5	32.1
June Dec.	Scot. Mort. & Tst.	110½	8.5	3.9	1.0	5.3	27.7
June Dec.	Scot. National	150	13.11	†3.9	1.1	3.9	34.2
May Dec.	Scot. Northern	111½xd	21.5	3.8	ϕ	5.1	ϕ
July Dec.	Scot. Ontario	64½xd	21.5	2.4	ϕ	5.6	ϕ
Aug. Mar.	Scot. Utd. Inv.	59½	26.3	h1.5	1.0	3.8	39.3
Apr. Aug.	Scot. Western	59	26.2	h1.7	1.0	4.3	34.2
—	Scot. Westn. 'B'	58	—	—	—	—	—
Apr. Oct.	Sec. Alliance Tst.	191	12.2	6.30	0.9	5.0	33.1
Jan. June	Sec. Great Nthn.	84	13.11	†2.01	1.0	3.6	40.9
—	Do. "B"	82	18.9	—	—	—	—
Dec. June	Securities T. Sc.	189	8.5	7.05	ϕ	5.6	ϕ
June	Select Risk Inv. SUS$	500	21.6	Q25c	—	2.5	—
Apr. Sept.	Shires Inv. 50p	147	26.2	9.73	ϕ	9.9	ϕ
November	Sizewell 10p	77	2.10	1.8	1.1	3.5	39.5
Dec. June	Sphere Inv.	127	15.11	4.0	ϕ	4.8	ϕ
Dec. June	SPLIT Inc. 10p	172	8.5	10.83	1.0	9.4	15.8
—	SPLIT Cap. 10p	68	—	—	—	—	—
Jan. June	Stanhope Gen.	132	2.1	†3.11	1.5	3.5	28.7
Feb. Aug.	Sterling Tst.	188	26.3	6.5	1.0	5.0	28.4
June Jan.	Stockholders Inv.	99	11.12	†2.35	1.1	3.6	38.9
August	Technology	108	15.1	2.64	1.0	3.6	40.9
Mar. Oct.	Temple Bar	107	26.2	5.5	1.0	7.7	18.7
April Nov.	Throg. Growth	27½	26.2	2.0	1.1	10.9	12.7
—	Do. Cap. £1	120	—	—	—	—	—
Mar. Aug.	Throgmorton	93½	29.1	4.87	1.0	7.8	19.1
May Nov.	Do. 8½% Loan	£157	16.10	Q8½%	36.7	†5.5	—
Mar. Oct.	Tor. Invest. Inc.	91	26.2	†5.7	1.2	9.3	13.1
October	Do. Cap.	128	18.9	0.57	—	0.7	—
Feb. Aug.	Trans. Oceanic	180	26.3	5.5	1.0	4.6	33.1
Feb. Aug.	Tribune Invest.	66	12.2	1.7	1.3	3.8	29.2
Oct. Apr.	Triplevest Inc. 50p	69½	23.4	4.94	1.0	10.6	13.9
—	Do. Capital £1	187	—	—	—	—	—
Dec. June	Trust Union	120xd	21.5	4.2	ϕ	5.2	ϕ
Feb. Aug.	Trustees Corp.	160	2.1	†4.85	1.1	4.5	31.0
Apr. Oct.	Tyneside Inv.	119	12.3	4.43	1.1	5.6	24.6
Feb. Aug.	Utd. Brit. Secs.	130	2.1	†4.46	1.0	5.2	29.0
May Nov.	Utd. Capitals	21½	23.4	1.04	1.1	7.2	19.0
May Nov.	US Deb. Corp.	94	9.4	4.05	1.0	6.4	22.3
Jan. July	U.S. & General Tst.	197	29.1	6.83	1.1	5.2	26.4
June	US Trust Fund $1	620	19.6	Q10c	—	0.8	—
June	Viking Resources	107½	8.5	1.32	1.4	1.8	58.6
March	W. Cst. & Texas 10p	66½	26.2	1.1	ϕ	2.5	ϕ
June Dec	Wemyss Inv. £1	280xd	21.5	12.5	1.0	6.7	21.9
Aug. Mar.	Winterbottom	216	29.1	5.6	1.0	3.9	38.0
Feb. Aug.	Witan Inv.	93½	11.12	2.65	ϕ	4.3	ϕ
July	Do. "B"	88	30.5	0.07	—	—	—
Apr. Sept.	Yeoman Inv.	201	26.2	8.62	1.0	6.4	22.7
July Dec.	Yorks. & Lancs.	28½	27.11	1.55	1.0	8.3	17.6
Dec. June	YoungCo's Inv. £1	100xd	21.5	4.2	1.1	6.3	22.7

FINANCE, LAND—Continued

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
Jan. Nov.	Lon. Merchant	92	2.1	†h0.84	4.1	1.4	23.7
June Jan.	M. & G. Hldgs. 5p	218	15.1	†3.86	5.2	2.7	10.7
November	Majedie Invs. 10p	83	13.11	‡0.75	2.6	1.3	43.6
Apr. Oct.	Martin (R.P.) 5p	53	23.4	‡4.5	0.7	‡	17.4
Mr.Jn.S.D.	Mass Mrt. & R'lty	770	23.3	Q$1.36	—	8.9	—
—	Mooloya (£1)	66	—	—	—	—	—
October	N.M.C. Invs. 12½p	20	24.7	1.43	1.6	10.7	8.6
—	Nippon Fd. Stg. 10p	290	—	—	—	—	—
—	Parambe 10p	14½	26.3	0.4	ϕ	4.1	ϕ
May Dec.	Park Place Inv.	59	26.3	‡2.5	4.4	6.3	10.5
June Nov.	Pearson (S) & Son	284	23.4	8.0	4.3	4.2	5.6
Nov. July	St. George 10p	14½#	30.10	‡0.49	1.0	5.0	29.2
July Dec.	Scot. & Merc. 'A'	122	27.11	3.37	1.2	4.2	31.1
Nov. May	S.E. £4¼pc Ann.	£55	9.4	Q4¼%	—	7.7	—
March Oct.	Smith Bros.	54	12.2	d4.97	0.8	13.7	15.8
June	Suez Fin. NF100	£38½	30.5	Q27%	ϕ	8.4	ϕ
April	Trans. Mkt. Tst. 1p	£11	9.4	Q15.0	ϕ	1.4	‡
Apr. Aug.	Wstn. Select. 20p	28	26.2	2.1	1.1	11.2	(12.4)
Mar. Oct.	West of England	52	23.4	†1.54	4.5	4.4	6.3
—	Yorkgreen 10p	15	13.11	H0.35	—	3.3	30.2
Apr. Aug.	Yule Catto 10p	89	26.3	1.54	3.5	2.6	12.6

OILS

Dividends Paid	Stock	Price	Last xd	Div Net	C'vr	Y'ld Gr's	P/E
—	††Aran Energy £1	75	—	—	—	—	—
January	Attock 20p	128	11.7	—	—	—	—
May Dec.	Brit. Borneo 10p	228xd	21.5	7.53	1.4	4.9	21.2
Nov. May	Brit. Petrol'm. £1	1144	26.3	24.68	3.9	3.2	9.9
Jan. July	Do. 8% Pf. £1	73	11.12	5.6%	634.9	11.4	—
—	Burmah £1	116	1074	—	—	—	31.6
Feb. Aug.	Do. 8½ Ln. 91/96	£66½	2.1	Q8½%	4.7	£14.4	—
—	††CCP Nth. Sea £1	£16¼	—	—	—	—	—
—	††Candecca Res.	69	—	—	—	—	—
Dec. June	Century 10p	82	27.11	†2.67	3.1	4.9	7.9
—	Charterhall 5p	45	567	—	—	—	—
July	Cie Fr. Petroles B.	£22	777	Q14.1fr.	1.9	8.1	9.6
—	††Cluff Oil £1	525	—	—	—	—	—
—	Do. Cnv. "A"	525	—	—	—	—	—
—	††Clyde Petrol £1	160	—	d1.12	3.6	1.0	39.5
—	††Gas & Oil Acreage	152	—	—	—	—	—
—	Hunting Petrol	130	27.11	4.65	2.0	5.5	(11.8)
December	KCA	39	8.5	1.0	4.7	3.8	6.1
—	LASMO	226	—	—	—	—	—
Feb. Aug.	LASMO 14% 1981-83	£100¾	15.1	Q14%	—	±14.5	—
—	LASMO "Ops" 10p	765	—	—	—	—	—
—	Magnet Metals 10c	18	—	—	—	—	—
May	Oil Expl. 10p	252	23.4	2.35	2.9	1.4	28.0
—	Premier Cons. 5p	33	—	—	—	—	—
—	Ranger Oil	£12⅛	—	—	—	—	—
—	Reynolds Div. 1c	1⅞	—	—	—	—	—
May Oct.	Ryl. Dutch Fl.20	£39xd	18.5	Q$1.75%	1.9	6.8	7.6
—	Sceptre Res.	350	—	—	—	—	—
Nov. May	Shell Trans. Reg.	762	26.3	17.54	3.0	3.4	9.5
Feb. Aug.	Do. 7% Pf. £1	64	2.1	4.9%	110.2	11.4	—
—	††Siebens (U.K.) £1	208	—	—	—	—	—
Apr. Oct.	Texaco 4¾% Cnv.	£62	26.3	Q4¾%	—	†7.8	—
Dec. July	Tricentrol	228	23.4	N5.36	6.4	3.5	17.9
—	Ultramar	286	11.65	N10.0	—	5.3	7.5
Jan. July	Do. 7pc Cnv. £1	141	2.1	Q7%	37.5	7.1	—
—	††Viking Oil £1	170	—	—	—	—	—
—	Weeks Pet. 10cts	140	—	—	—	—	—
—	Do. Pfd. Ord. 10c	140	—	Q15¼c	—	6.4	—
—	Woodside A50c	52	—	—	—	—	—

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FINANCIAL TIMES

Monday June 4 1979

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Parsons technology deal seen as breakthrough

BY PHILIP BASSETT, LABOUR STAFF

CLERICAL WORKERS at NEI Parsons, the North-East's major engineering group, have reached agreement on the introduction of microelectronic technology which both the company and union officials regard as a breakthrough.

The agreement with the Association of Professional, Executive, Clerical and Computer Staff, includes a no-redundancy guarantee as a result of *the introduction of micro*-electronic technology.

The deal, which covers about 600 clerical staff in C. A. Parsons, Grubb Parsons, GP Instrumentation and RP Automation, is seen by APEX officials as a blueprint for similar agreements throughout the country.

It is closely in line with the guidelines on the introduction of new technology, on guarantees of status and earnings as well as job security. Negotiations started more than 12 months ago.

The union has agreed to co-operate with the introduction of Visual Display Units for stock control, purchasing and other clerical work and other systems such as desk top data entry devices and word processors. The group has had VDUs installed for some time, but they have been kept under wraps until an agreement was reached.

As well as the job security guarantee, full discussions aimed at redeployment will take place with the union if an excess of labour develops in any particular area. The group's job evaluation scheme will be redesigned to recognise changes in responsibility from the introduction of the new equipment, though no clerical staff will be downgraded as a result.

Particular care will be taken to avoid any risks to health and safety from the operation of the VDUs, with operators in constant attendance taking a 20-minute break after every hours' VDU work.

A training scheme for the initial 20 operators and others to follow will be set up, with payments of £20 for attendance.

The agreement is indefinite, *with a joint management* and union committee being set up to monitor and control introduction of further systems.

NEI Parsons said the deal was a "breakthrough" and that the group was "very pleased" to have concluded it after such protracted negotiations. Mr. John Creaby, northern area organiser of APEX, said the agreement showed an acceptance of new technology on the trade union's terms.

U.S. view on shipping 'makes normal sea trade impossible'

BY IAN HARGREAVES, SHIPPING CORRESPONDENT

THE DECISION of a U.S. federal Grand Jury to indict criminally seven trans-Atlantic shipping groups was attacked yesterday as "the product of a total lack of a coherent shipping policy in the U.S."

Mr. David Ropner, president of the General Council of British Shipping, said that the decision reflected the Administration's one-sided view of shipping matters, which was making normal sea trade with the U.S. commercially impossible.

Under UK law, none of the activities investigated by the *Grand Jury would be con*sidered illegal, he said.

The indictments, reported in late editions of Saturday's Financial Times, concern an alleged conspiracy between the companies illegally to fix prices on North Atlantic freight services between 1971 and 1975.

Seven shipping groups, three of them Europe-based, were handed criminal indictments and 13 company executives accused of misdemeanours.

The decisions is likely to cost each group named $1m and each individual $50,000, but the exact sums have yet to be determined by negotiation between the accused and the Department of Justice. They must then be ratified by the courts.

The groups involved are Hapag Lloyd of West Germany, Atlantic Container Line (comprising companies from the UK, France, Holland and Sweden); Dart Containerline (with companies fom the UK, Belgium and Taiwan); Sealand Services, Seatrain, Farrell Lines and United States Lines.

Thirteen individuals are also named on misdemeanour indictments. They include two Britons, Mr. Philip Bates, chairman of Atlantic Container, and Mr. David Hall, formerly of Dart; two Germans, a Belgian, a Swede and six Americans.

Atlantic Container of Southampton, said last night that it would be studying the Grand Jury's ruling today and could not comment at this stage.

Britain and the other European Governments affected by the decision take a serious view of this latest twist in a long-running battle between the U.S. and others over the legality of the so-called "closed conference" system for fixing prices and levels of service in liner shipping.

Mr. John Nott, Trade Secretary, said on Friday that the Government would review its policy on co-operation with non-maritime anti-trust investigations in Britain.

The shipping industry is outraged by the prosecution, but sees one chink of light in the failure of the U.S. Justice Department to couple with the indictments a statement about future regulation of shipping on the North Atlantic.

That, it is hoped, will pave the way for a fruitful resumption of talks between the U.S. and the 13 members (Europe plus Japan) of the Consultative Shipping Group, which are to re-open later this year.

NEDC talks may clarify Tory stand on strategy

BY HAZEL DUFFY, INDUSTRIAL CORRESPONDENT

A MEETING of the National Economic Development Council on Wednesday—the first since the Conservatives took office—could clarify Government attitude to the industrial strategy exercise.

The meeting will be chaired by *Sir Geoffrey Howe*, the Chancellor, and will be attended by Sir Keith Joseph, Mr. James Prior, and Mr. John Nott.

The Government has made no reference to its attitude towards NEDC as a forum for discussion on economic and industrial problems. But it will have a chance to comment on the value of the industrial strategy exercise *initiated by the* previous government, when discussing a paper which has been submitted by the National Economic Development Office.

After setting out general economic indicators both for the UK and worldwide, the paper charts the familiar performance of British industry over the past 10 years.

It points out that, although the decline in the UK's share of world exports by manufacturing industry has stabilised since 1974, both the volume and value of imported manufactured goods has grown over the past five years, and they are taking a higher proportion of the home market.

Part of the paper also discusses the problems of specific industries, which are based mainly on the work that has been done in the sector working parties.

Also on the agenda is a progress report from the Department of Employment, which will be given by Mr. Prior, on efforts in the construction engineering industry to reach a national agreement on pay and industrial relations procedure.

The report indicates that progress is being made. It is hoped that there will be improvements *to productivity and completion* dates on large industrial construction sites.

Petrol plea for holidaymakers

CROMER Chamber of Trade, Norfolk, is calling for petrol vouchers to be issued to holiday-makers to ensure that they get enough fuel to return home safely. Many garages in East Anglia are selling to regulars only.

Continued from Page 1

Engineers

workers last month rejected a deal worth about 14 per cent by three to one.

Power workers' leaders will meet representatives of the Electricity Council, also on Thursday.

The industry's unofficial shop stewards' committee has called on negotiators to give 21 days' notice of industrial action if no progress is made, but union officials seemed confident yesterday that further new money would be found.

Power workers last month rejected by postal ballot an offer that would have provided between £4.60 and £9.25 a week extra and consolidation of £3.50 in supplements.

Union officials said yesterday, though, that there was a misunderstanding during the ballot on the consolidation of the supplements; and that the negotions this week were likely to clear that up.

Improvement of differentials under a re-grading exercise was also expected. One official said that after informal talks last week there was an understanding and appreciation of the size of the postal ballot rejection. "Both the board members and the national trade union officials appreciate that some changes will have to be made in the offer."

FT Monthly Survey of Business Opinion

Industrial demand picks up

BY DAVID FREUD

*INDUSTRIAL DEMAND is pick*ing up on a broad front, according to two surveys released today. Companies remain uncertain how long the recovery will be sustained.

Manufacturers' order books were stronger in May than throughout last year, says the Confederation of British Industry's monthly trends survey.

The finding is supported by the Financial Times Business Opinion Survey, which charts a further rise in new orders. The FT survey found that businessmen were less inclined to expect further increases in their order books in the next 12 months than they were earlier in the year.

*The CBI says that the im*provement in order books "no doubt" partly reflects some catching-up from the dislocation earlier in the year.

The recovery was spread broadly across all manufacturing industry, though the consumer goods sector reports the strongest demand.

In line with the increased demand, the CBI reports a small improvement in manufacturers' expectations for output volume in the next four months. *Expectations are still below* those of last December.

The FT survey found a sharp improvement in confidence among businessmen both over prospects for the economy and for the general business outlook, due mainly to the Conservative victory in the general election.

The index covering labour requirements moved to its lowest point for two years, with companies showing less concern over the effects of employment legislation in plans to reduce labour.

The survey comments that this is exactly the trend one would expect under the Tory Government's policy. "The present shift of opinion may of course simply be due to a number of respondents' awareness of this fact."

The index suggests that industry expects wage costs to rise faster in the next 12 months, though smaller increases in unit costs were expected than previously.

Despite this the index covering the expected level of profit margins continued the decline of the previous two months, with customer resistance to price increases and difficulty of securing productivity improvements among the reasons given.

Details, Page 22

Pope stresses Europe's unity despite rifts

BY ANTHONY ROBINSON, EAST EUROPE CORRESPONDENT

IN A clear message of encouragement to Roman Catholics throughout Eastern Europe, Pope John Paul declared the "spiritual unity of Christian Europe" in spite of political divisions yesterday.

At a ceremony in Gniezno, the shrine in Western Poland dedicated to St. Adelbert, the 10th century Czech-born martyr, and made more poignant by the absence of Mr. Franticek Tomacek the Czech Prime Minister, who was refused permission to visit Poland by the Czechoslovakian authorities, the Pope underlined the significance of his election as the first Slav Pope.

"Is it not Christ's will . . . that this Polish Pope, this Slav Pope, should at this precise moment, manifest the spiritual unity of Christian Europe?" he asked. "Yes, it is Christ's will," he added forcefully, and went on to name all the Slav peoples converted Roman Catholicism.

By emphasising the durability of the Christian faith, the Pope appealed directly to *the faithful throughout* Eastern Europe.

He gave a similar message to the youth of Poland at an early morning Mass outside the Church of St. Anne in Warsaw before departing from Victory Square for Gniesno, in a white helicopter.

Strength was not to be measured by physical force but by the force of the spirit, he told thousands of cheering students and young people, whom he called the future of Poland.

Thousands greet Pope, Page 2

Iran development cutback threatens losses of £19bn

BY ANDREW WHITLEY IN TEHRAN

WESTERN and Japanese concerns stand to lose nearly $38bn (£19bn) on civil projects in Iran which have been halted or cancelled as a result of the revolution. Defence contracts and smaller civil jobs probably double that amount.

Iran has been described by one observer as an "industrial cemetry" with hundreds of unfinished or unusable development projects littered across the country—the remnants of the Shah's grand design for making Iran the world's tenth industrial power.

Work on virtually all projects came to an end before the Shah's departure because contractors were not paid. The Government intends formally to cancel many of them, despite the enormous sums already spent.

In other cases completed schemes, such as one of the world's largest sugar plants, are standing idle, while other *projects seem destined to* become white elephants because of the cancellation of schemes on which they are dependent.

The arrival of a puritanical regime committed to social reform and little interested in economic development has meant the cancellation or drastic scaling down of civilian projects ranging from nuclear power stations to luxury housing and the electrification of railway lines. Defence projects are being subjected to even bigger cuts.

In Tehran alone, four projects—an international airport, an underground railway, a new city centre and an unfinished township on the outskirts, together valued at $5.3bn—are almost certain to be scrapped.

Only the township of Farahzad may complete work already in hand.

The head of the Atomic Energy Organisation, Mr. Fereidun Sahab, said yesterday that the future of two West German nuclear plants, now nearing completion at Bushire on the Gulf, was to be debated by a top-level commission.

Independent estimates put the likely final cost of the two 1200 megawatt plants at $6.92bn: though Kraftwerk Union, who *still have* 400 men on site out of their original expatriate labour force of 3,000, are said to be arguing they should cost no more than $5.24bn.

In this state of limbo, however, some clear indicators are emerging. Although no formal decision has been taken on a gas pipeline to the Soviet Union, known as IGAT 2, the French consortium, Spie-Capag, working on the laying of one stage, have been told to go home.

Among the few projects thought almost certain to continue are the country's copper mines at Sar Cheshmet, the $3.3bn Iran-Japan petrochemical complex at Bandar Shabpour, and two steel mills at Bandar Abbas and Ahwaz.

The rest represent what a foreign diplomat here recently described as a waste of national resources and energy unprecedented anywhere.

Other projects are held up by disputes over unpaid progress payments, curbs on the number of foreigners allowed to work in Iran and the stranglehold of worker committees on foreign companies. Many foreign managements are being held hostage by workers.

The Government is insisting that back payments will not be made until companies sign a document waiving all claims arising out of the revolutionary turmoil. Companies are having to decide whether to keep a low profile or to cut their losses and get out.

Most foreign contractors have still to be told that their projects, nurtured over many years, are definitely to be cancelled.

Oil company board resigns, Page 2; Industrial projects, Page 3

Thatcher set to call for EEC reforms

BY PHILIP RAWSTORNE

MRS. MARGARET Thatcher is expected to reassert the Government's demands for EEC reforms when she visits Paris tomorrow for talks with President Giscard d'Estaing.

Making her first visit to the Continent as Prime Minister three days before the European elections, Mrs. Thatcher intends to renew the Tory commitment to membership and development of the Common Market *while warning that the Govern*ment will be resolute in its defence of British interests.

Mrs. Thatcher will tell the French President—as she told Herr Schmidt, the West German Chancellor, last month—that Britain will not be "a soft touch" in negotiations.

She will make it clear that the Government will be seeking Common Agricultural Policy *reforms* and a fisheries agreement which recognises Britain's special position.

The Prime Minister will stress the need to ease the burden of Britain's contribution to the EEC budget—much of which, she told a party Euro-rally in Birmingham at the weekend, could be used to cut income tax at home.

Mrs. Thatcher, who will preside over the Tory Party's final election press conference on Wednesday, said that her aims in Europe would be the same as those at Westminster: Lower public spending and taxes, more competition and less bureaucracy.

Appealing for a massive turn-out and Conservative vote, Mrs. Thatcher said that British Tory MPs could become the largest single national group on the new Parliament and ensure a majority for the Centre Right parties.

The Tory campaign now appears set to capture nearly 60 of Britain's 81 seats.

Mr. Edward Heath, the former Prime Minister, who by polling day will have addressed 35 meetings in almost as many constituencies, said at the weekend, that Labour's only use for Europe was "as a scapegoat for the disastrous results of their policies over the last five years."

But Mr. Anthony Wedgwood Benn said in Glasgow that Labour MPs would be needed at Strasbourg to work for a new framework of co-operation in Europe, not one based on a treaty which enshrined the principles of capitalism and removed the political rights of working people.

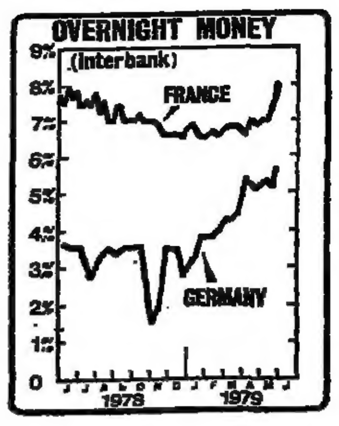
Mr. Benn will preside at Labour's election press conference today.

THE LEX COLUMN

Money rate war tests EMS

Continental Western Europe is going through a bout of good old-fashioned interest rate competition; *I raise my rates for domestic policy reasons, you put yours up to protect your currency.* The sharp rise in oil prices is putting the European Monetary System under pressure as early as even the pessimists can have supposed, and although countries were meant to take thorough-going financial policy action to keep their currencies in the system, the interest rate hike is an older and more familiar remedy.

To judge by the orgy of upward adjustments in rates early last week, the Bundesbank's decision to put up its Lombard rate to 5½ per cent had been well leaked to other central banks. The Germans are putting their domestic inflation policy, which requires a strong mark, before the fortunes of the EMS. Bundesbank dollar sales in the early part of this year had already pushed the mark steadily up the EMS, and now if the dollar comes under pressure as the U.S. trade deficit widens, the mark will as usual be the chief beneficiary among the EMS currencies. So the Belgians and Dutch have had to raise their Bank Rates, and the Bank of France found itself raising its money market intervention rates three days in a row in order to keep up with a rising market and prevent the French banks running a profitable position on bills discounted at the central bank. The Danes, who have taken no action, have seen their currency crash from near the top of the EMS to the bottom.



Realignment

Because today is a holiday throughout Continental Europe and monetary authorities are notoriously prone to take decisions on public holidays, there has been some speculation that a realignment of the float currencies is imminent. A change in the parity of, say, the Belgian franc against the mark would not be disastrous for the system as a whole, although the Belgians, with wage costs indexed to inflation, would presumably resist it. But a change in the mark/French franc rate after only three months of official operation would look very bad.

The French franc is not itself embarrassingly placed in the EMS, but this is very largely because French exchange controls make it easy for the authorities to protect the spot value of their currency while letting the forward rate on the free external market weaken considerably. Eurofranc deposit rates now stand at the sort of premium—3 points or so—over domestic French rates that suggests there has been quite a lot of pressure on the forward franc.

A few months ago it was easy to believe that U.S. interest rates were the villain of the piece, inexorably forcing European rates higher as funds flowed back into dollars. But now inflationary forces in the European economies stemming from the oil price rise are so great that the U.S. rates are probably less relevant than they were.

Naturally enough, the universal depression of the Continental bond markets has been feeding through into shares, and the German equity market, for example, is now around 12 per cent below its year's high. No one seems to have been convinced that Thursday's Lombard rate increase is the peak of the present cycle, and a stock market that was already weak on the absence of buyers attracted a fair volumeof selling on Friday.

For the London gilt-edged market, the message cannot be very comforting. The international interest rate climate is deteriorating, and unless sterling promises to continue its magical appreciation there will soon be less inducement for European fund managers in search of good returns to look far beyond their own domestic bond markets.

Before the Government's great share sell-off gets under way, International Telephone and *Telegraph is going to get first* call on the fund managers' spare cash with its offer for sale of a 15 per cent stake in its UK subsidiary, Standard Telephones and Cables. Terms are due to be finalised on June 14, just two days after the Budget.

The sale will not soak up a lot of cash. STC as a whole might have a stock market value of very roughly £160m, *which would make the 15 per* cent minority worth a bit over £20m. All the same, the listing of the Post Office's third big supplier (along with Plessey and GEC) will create a lot of investment interest, not least because STC seems to be approaching a turning point in its profits history.

Rationalised

The group made £26.9m pre-tax in 1978 on sales of £374m, and its record over the past five years has been uninspiring. But over that period, STC has substantially *rationalised* its telecommunications business, cutting the workforce from 21,000 to 13,000 in the process, and it *has also been investing heavily* in product development. It took the design lead on the TXE4 semi-electronic switching system, and as a result has received a very large proportion of the orders placed for this system so far. GEC and Plessey are now playing an increasing part in the TXE4 programme, but STC claims that its share of *Post Office business is likely to* settle down at around a third, compared with only about a fifth a few years ago.

Although its development programme is not yet complete, profit are now beginning to shift upwards. As a guide, the prospectus forecast could indicate a pre-tax rise of roughly a fifth this year, which would be in line with the anticipated sales growth to around £450m. The developement of the System X digital switching system could throw the whole game open again, but in present forecasts System X is not going to start taking a big share of the network until the end of the 1980s.

So the offer for sale is likely to go well: the prospective p/e, fully taxed, may only just be in double figures. Of course ITT is not making the sale because it needs the money—the 15 per cent disposal is the least it could get away with under stock exchange practices. Nor is it likely to want its interest to be diluted much, despite its suggestion on Friday that STC's *paper could be used as bid cur*rency. The prime reason for the disposal is the political value of a local minority—an approach which ITT has already tried elsewhere in Europe.

Weather

UK TODAY

RATHER CLOUDY with outbreaks of rain.

London, S.E., E., Cent. S., N. England, Midlands, E. Anglia, Channel Islands

Cloudy, thundery showers, heavy in places. Some bright *spells. Max. 24C (75F).*

S.W. England, S. Wales

Rain, some thunder. Brighter later. Max. 21C (70F).

N.W. England, Lake District, N. Wales, Argyll, S.W. Scotland, N. Ireland, Isle of Man

Cloudy, some rain and thunder. Bright intervals. Max. 21C (70F).

N.E. England, Borders, Edinburgh and Dundee

Dull with fog patches. Sunny intervals. Thundery showers later. Max. 22C (72F).

N.W. Scotland, Glasgow, Cent. Highlands, Aberdeen, Moray Firth

Sunny periods. Thundery showers later. Max. 20C (68F).

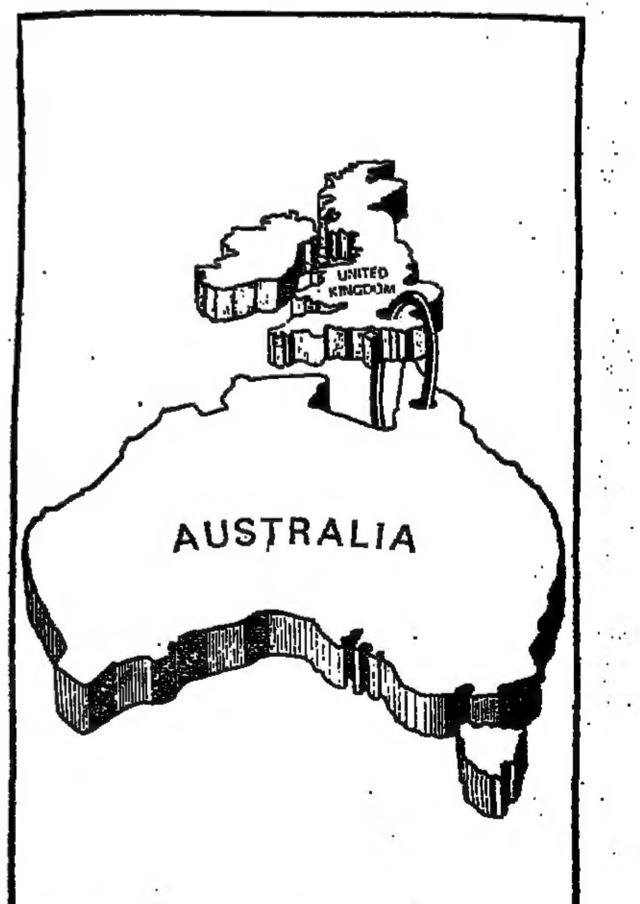
N.E. Scotland, Orkney, Shetland

Sunny intervals. Coastal fog *patches. Max. 17C (63F).*

Outlook: Cloudy with rain in places, becoming brighter and drier from the West.

		Y'day midday °C	°F			Y'day midday °C	°F
Ajaccio	S	26	79	Lisbon	S	23	73
Amsdm.	S	27	81	Locarno	R	16	61
Bahrain	S	39	102	London	C	15	59
Barclna.	S	24	75	Luxmbg	C	22	72
Belfast	S	19	66	Luxor	S	37	99
Belgrd.	S	28	82	Madrid	S	26	78
Berlin	S	29	84	Majorca	S	25	77
Biarritz	S	27	81	Malaga	S	23	73
Bmghm.	C	14	57	Malta	S	29	84
Blackpl.	F	22	72	M'chstr	S	22	72
Bordx.	F	24	75	Melbne.	S	17	63
Boulgn.	Fg	13	55	Milan	F	23	73
Bristol	C	14	57	Mntreal.	C	21	70
Brussels	F	25	77	Munich	S	27	81
Budpst.	F	30	86	Nairobi	S	23	73
B. Aires	S	15	59	Naples	S	30	84
Cairo	S	31	88	Nwcstl.	C	14	57
Cardiff	C	14	57	N. York	R	18	65
Cape T.	C	18	65	Nice	F	27	81
Chicago	S	24	76	Oporto	C	17	63
Cologne	S	28	82	Oslo	S	22	72
Cpnhgn.	S	23	73	Paris	F	24	75
Dublin	C	14	57	Perth	C	16	61
Ednbgh.	S	15	59	Prague	S	30	86
Faro	S	20	68	Reykjvk.	F	13	55
Florence	S	31	88	Rio J'o	S	25	77
Frankft.	F	25	77	Rome	F	27	81
Funchal	S	21	70	Salzbrg.	S	31	88
Geneva	S	22	72	Singapr.	S	29	85
Gibrltr.	S	25	77	Stckhm.	S	20	68
Glasgow	S	18	64	Strasbg.	F	25	77
G'rnsey	C	13	55	Sydney	C	18	65
Helsinki	S	19	66	Tenerife	S	18	64
H. Kong	S	28	82	Tokyo	S	24	74
Innsbrk.	S	28	82	Toronto	S	21	70
Invrnss.	F	13	55	Valencia	S	28	82
I.o.Man	S	17	63	Venice	F	29	84
Istanbul	S	25	77	Vienna	S	30	86
Jersey	C	15	59	Warsaw	F	30	86
Jo'burg	S	20	68	Zurich	F	23	73
L. Plms.	F	21	70				

C—Cloudy. F—Fair. Fg—Fog. R—Rain. S—Sunny. Sl—Sleet. Sn—Snow.



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Registered at the Post Office. Printed by St. Clement's Press for and published by the Financial Times Ltd., Bracken House, Cannon Street, London, EC4P 4BY.

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